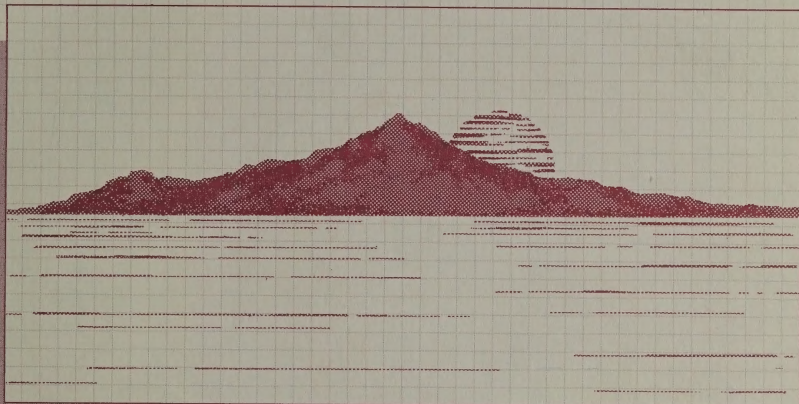




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MEAD/McCULLOUGH- VICTORVILLE/ADELANTO

TRANSMISSION PROJECT

FINAL ENVIRONMENTAL REPORT

U.S. DEPARTMENT OF INTERIOR
LOS ANGELES DEPARTMENT OF WATER AND POWER
MAY 1986

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DEPARTMENT OF THE INTERIOR
LOS ANGELES DEPARTMENT OF WATER AND POWERFinal
ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT
for the proposed
MEAD/McCULLOUGH-VICTORVILLE/ADELANTO
TRANSMISSION PROJECTPrepared by
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Bureau of Land Management

FINAL ENVIRONMENTAL REPORT (EIS/EIR)

**MEAD/McCULLOUGH-VICTORVILLE/ADELANTO
TRANSMISSION PROJECT**

Clark County, Nevada and San Bernardino County, California

**Nevada State Clearinghouse No. SAINV #85300027
California State Clearinghouse No. SCH #84222821**

**Lead Federal Agency: U.S. Bureau of Land Management
Lead State Agency: Los Angeles Department of Water and Power**

Prepared by:

WIRTH Environmental Services, A Division of Dames & Moore

May 1986

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Abstract

Los Angeles Department of Water and Power in concert with several other western utility companies proposes to construct a ± 500 kV transmission line from Mead Substation in Nevada to Adelanto Substation in California. The facilities would provide a number of benefits to these utilities' present and future customers. Alternatives considered are no action, energy conservation, alternative generation sources, alternative transmission technologies, and the proposed action with routing alternatives. The major impacts of the proposed action would be the impacts of access roads, tower sites and staging areas on soils, vegetation, wildlife and cultural resources, and the impacts of the transmission line itself on aesthetic resources, and other land uses and agricultural resources.

This Final ER must be used in conjunction with the Draft ER. Parties wanting to have additional comments considered by the lead agencies in making their decision on the Project should submit their comments to the above address within 30 days of publication of the Notice of Availability of the Final ER in the Federal Register.

Department of Water and Power



the City of Los Angeles

TOM BRADLEY
Mayor

Commission
JACK W. LEENEY, President
RICK J. CARUSO, Vice President
ANGEL M. ECHEVARRIA
CAROL WHEELER
WALTER A. ZEILMAN
JUDITH K. DAVISON, Secretary

PAUL H. LANE, General Manager and Chief Engineer
NORMAN E. NICHOLS, Assistant General Manager - Power
DUANE L. GEORGE SON, Assistant General Manager - Water
NORMAN J. POWERS, Chief Financial Officer

May 12, 1986

Transmittal
Final Environmental Report
Mead/McCullough-Victorville/Adelanto Transmission Project

In accordance with the National Environmental Policy Act and the California Environmental Quality Act, enclosed is a copy of the joint Final Environmental Report (FER) for the Mead/McCullough-Victorville/Adelanto Transmission Project. The FER is a combined Environmental Impact Statement and Environmental Impact Report jointly prepared by the United States Bureau of Land Management and the Los Angeles Department of Water and Power.

Comments on the FER are invited and will be received for 30 days after the publication of the Notice of Availability of the FER in the Federal Register. Please address your written comments to:

Mr. Gerald E. Hillier, District Manager
California Desert District
Bureau of Land Management
1695 Spruce Street
Riverside, California 92507

Sincerely,

A handwritten signature in dark ink, appearing to read "Norman E. Nichols".

NORMAN E. NICHOLS
Assistant General Manager - Power

Enclosure

cc: Mr. Gerald E. Hillier, District Manager

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SUMMARY

Los Angeles Department of Water and Power (DWP) and other project participants desire to design, construct, operate and maintain a 141-kilovolt high-voltage power line transmission line from the Mendocino Station near Ukiah, Calif., through the Humboldt-Siskiyou Transmission Project, will connect portions of California to out-of-state power resources in the inland Southern California, Nevada, Utah, Arizona and New Mexico. The project participants include United Public Power Agency (UPPA) of Santa Clara and Pinal Counties and the Southern California Edison Co. (SCE), Department of Energy, Strategic Power Administration (Western), San Diego Edison (SDGE) and other members of the Southern California Edison Power Authority (SCEPA) including SCE, collectively referred to as the Project Partners.

This Final Environmental Impact Final EIS constitutes a final environmental impact statement/Environmental Impact Report (EIS/EIR), in compliance with the National Environmental Policy Act of 1969 (NEPA) and the California Environmental Quality Act (CEQA), respectively. The United States Department of the Interior, Bureau of Land Management (BLM) is the Federal lead agency (NEPA) and DWP is the state lead agency (CEQA). This Final EIS contains proposed conditions and agency comments on the Draft Environmental Impact Report (EIR) EIS previously prepared for this project, and describes changes in the proposed action resulting from these comments. The full analysis conducted for this project can be found in the Draft EIR documents dated June 1992, and is hereby incorporated by reference. Any information contained in the Final EIR that is inconsistent with that found in the Draft EIR superseded Draft EIR information.

The Draft EIR contained both alternative current (AC) and DC transmission lines. Subsequent to the Draft EIR, a decision was made by the Project Partners that DC transmission technology is most appropriate and will be used in development of the transmission line. This line will have increased capacity of DWP (presently 1400 MW) from Ukiah to Ukiah, a converter station and inverter facilities will be required located in either Mono or Inyo Counties, and a DC line substation will be needed at Ukiah Substation.

PURPOSE AND NEED

The Western Systems Coordination Council (WSCC) has projected that, by 1994, the power firm which is projected will have increased size (not of 1700 to 2211 MW in the California Southern Power WSCC Phase 1) represents an increase of 15 percent. This need results in the necessity, coupled with the economic and difficulties of building new generating resources, reinforce the need for utilization existing firm transmission as a long-term firm resource for uninterrupted transfer of energy. Additionally, the continued dependency of California utilities on oil and natural gas for generating base load contributes to their respective territories have both economic and security problems.

SUMMARY

SUMMARY

Los Angeles Department of Water and Power (DWP) and other project participants propose to design, construct, operate and maintain a 500 kilovolt (kV) direct current (DC) transmission line from the Mead Substation near Boulder City, Nevada to the Adelanto Substation in California. The proposed Mead/McCullough-Victorville/Adelanto Transmission Project will connect southern California to out-of-state energy resources in the Inland Southwest (Arizona, Nevada, New Mexico and west Texas). The project participants include M-S-R Public Power Agency (cities of Santa Clara and Redding, and the Modesto Irrigation District); U.S. Department of Energy, Western Area Power Administration (Western); Salt River Project (SRP); and most members of the Southern California Public Power Authority (SCPPA) including DWP, collectively referred to as the Project Sponsors.

This Final Environmental Report (Final ER) constitutes a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR), in compliance with the National Environmental Policy Act of 1969 (NEPA) and the California Environmental Quality Act (CEQA), respectively. The United States Department of the Interior, Bureau of Land Management (BLM) is the Federal lead agency (NEPA) and DWP is the state lead agency (CEQA). This Final ER contains responses to public and agency comments on the Draft Environmental Report (Draft ER) previously prepared for this project, and describes changes in the proposed action resulting from these comments. The full analysis conducted for this project can be found in the Draft ER document, dated June 1985, and is hereby incorporated by reference. Any information contained in the Final ER that is inconsistent with that found in the Draft ER supercedes Draft ER information.

The Draft ER considered both alternating current (AC) and DC transmission lines. Subsequent to the Draft ER, a decision was made by the Project Sponsors that DC transmission technology is most appropriate and would be used in development of the transmission line. The line will have a nominal capacity of 2000 megawatts (MW) from Mead to Adelanto. A converter station and associated facilities will be required adjacent to existing Adelanto Substation, and a DC bus and switchyard will be needed at Mead Substation.

PURPOSE AND NEED

The Western Systems Coordinating Council (WSCC) has projected that, by 1992, the peak firm load requirement will have increased over that of 1985 by 6211 MW in the California-Southern Nevada WSCC Power Area. This represents an increase of 15 percent. This load growth in California and Nevada, coupled with the expense and difficulties of building new generating resources, reinforces the need for utilities to secure firm transmission on a long-term basis to provide for interregional transfer of energy. Additionally, the continued dependence of California utilities on oil and natural gas for providing base load electricity to their respective territories may pose economic and reliability problems.

The proposed Mead/McCullough-Victorville/Adelanto 500kV DC Transmission Line Project (hereinafter referred to as the Project) is proposed by the Project Sponsors to serve the following purposes:

- Help meet the forecast need for power of SCPPA and M-S-R members by providing firm, long-term transmission capacity for existing and future resources;
- Furnish access of all Project Sponsors to the economy energy market;
- Provide a path for sale of off-peak surplus capacity to California markets;
- Help reduce dependence on oil and natural gas for electricity consumed in the SCPPA member and M-S-R service areas;
- Provide out-of-basin support in the event of a Stage II or Stage III air quality episode in the South Coast Air Basin; and
- Enhance system reliability.

SCOPING PROCESS, PUBLIC AND AGENCY REVIEW

DWP and BLM conducted a number of scoping activities to determine the significant issues to be analyzed for the Draft ER. Scoping included the following seven major tasks:

1. Reviewing existing studies relevant to the project study area.
2. Conducting a subregional siting study and initiating an agency contact program.
3. Publishing a Notice of Assessment to solicit "responsible and trustee" agency comments.
4. Conducting scoping meetings with agencies and the public.
5. Selecting study corridors based on previous studies, new data, and agency and public comments.
6. Developing a Scope/Preparation Plan for the Draft ER.
7. Publishing notices required by NEPA and CEQA, announcing the intention to prepare an ER and soliciting comments.

Scoping and information meetings were held to inform people of the proposed project and to solicit their input and concerns. Agencies contacted throughout the environmental process included county planning departments, military authorities with jurisdiction in the project area, municipalities, other utilities,

and Federal and state regulatory agencies. Public meetings were held in July 1984 in Boulder City, Nevada and in Baker, Barstow and Victorville, California. Additional public information meetings to present initial routing alternatives were held in March 1985 in Boulder City, Baker, Silver Lakes and Adelanto.

Key issues identified through scoping and agency contacts were the basis for the environmental studies addressed in the Draft ER document. The environment of the routes chosen for study was inventoried for the following resources to establish the environmental baseline: air quality and meteorology, earth resources (geology, seismicity, hydrology, soils and paleontology), biological resources (vegetation, wildlife, threatened and endangered species), floodplains and wetlands, land use and jurisdiction, visual resources, socio-economics, and cultural resources (archaeology, history and ethnology). This environmental inventory was the basis for identifying and evaluating impacts, and comparing routing alternatives. Electrical, biological and safety effects were also evaluated, including site-specific potential interference with radio, television, and the instrument landing systems at George Air Force Base.

In addition to scoping meetings, the Project Sponsors have met and corresponded with potentially affected agencies and individuals prior to and following issuance of the Draft ER. Of particular note are contacts with George Air Force Base, which began in May 1984. Subsequent meetings with Air Force representatives to discuss routing options in the vicinity of Coyote Lake and George Air Force Base culminated in a site visit in October 1985 to determine a general alignment and mitigation measures that would eliminate potential impacts to flight operations.

Public hearings were held on August 6, 7 and 8, 1985 in Boulder City, Nevada, and Baker and Victorville, California to obtain comments on the Draft ER. Additionally, written comments were solicited. All comments submitted on the Draft ER are addressed in Chapter I of this document.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

Five general alternatives were considered and evaluated by the Project Sponsors during the early planning of the Project to meet the need of providing additional power in their respective service areas. These alternatives were: (1) No Action, (2) Energy Conservation, (3) Alternative Generation Sources, (4) Alternative Transmission Technologies, and (5) New $\pm 500\text{kV}$ DC Transmission Line with various routing alternatives (Proposed Action). Investigation of the alternatives described below led the Project Sponsors to the conclusion that the optimal means for supplying power to their service territories within the time frame of the stated need (given the economic, environmental and state-of-the-art constraints posed by alternative actions) is to construct an overhead DC transmission system between the Mead Substation in Nevada and the Adelanto Substation in California.

No Action

The No Action alternative as it is used in this Final ER is interpreted to mean that there would be no additional transmission facilities beyond those that are already constructed or approved for construction by the Project Sponsors. The advantages of the No Action alternative would be the preclusion of environmental impacts within the study area and the costs associated with the construction and operation of a new transmission line. The disadvantages of the No Action alternative include the loss of potential Project tax revenues in addition to positive environmental, socioeconomic and electric service impacts that would result from other mitigating actions taken by the Project Sponsors.

The Project Sponsors would probably increase generation from existing oil- and gas-fired units under the No Action alternative, in an effort to meet the forecasted need. Not only are oil and gas more expensive than coal, but their use is discouraged by Federal energy policy as stated in the Powerplant and Industrial Fuel Use Act (PIFUA) of 1978. Additionally, increased generation from existing power plants could not meet projected peak demand with existing capacity and committed capacity without firm transmission. Increased generation would reduce reserve margins to unacceptable reliability standards. The Project Sponsors would also continue to expand their energy conservation efforts in an attempt to mitigate the No Action alternative.

Some significant disadvantages would result from the shortage in electrical supply if the No Action alternative was selected. The Project Sponsors would not be able to diversify fuel sources and, accordingly, reduce their oil dependency. An interruption to the oil supply could seriously affect their service. Service might have to be interrupted more frequently for maintenance and emergency outages, and as a last resort, a moratorium on new hook-ups may become necessary. Such a situation could adversely affect residential, commercial and industrial customers in terms of income, health, safety and general convenience.

Energy Conservation

Energy conservation has the advantage of reducing energy consumption with no documented adverse environmental impacts. However, factors such as high installation cost, cost-effectiveness and public acceptance may inhibit the implementation of some energy conservation programs.

The Project Sponsors have developed and put into effect numerous energy conservation and load-management programs that have reduced energy consumption and system peak demand compared to earlier forecasts. Current demand forecasts for the utilities incorporate anticipated energy savings and reductions in peak demand from conservation and load-management programs, and demonstrate that despite these programs, a significant deficit remains between projected electricity demand and existing capacity.

Alternative Generation Sources

Project Sponsors in California could meet their stated needs by adding generation capacity. However, because of the high capital costs, environmental regulations and lead time required to construct a new generating facility, new power could not be provided to users in a realistic time period.

For California Project Sponsors, new generation would likely be located outside their respective service areas and would then require additional transmission facilities to deliver the new energy to their service areas. Additionally, new generation cannot be justified when existing generation sources are available in nearby areas.

Alternative Transmission Technologies

Other possible alternatives include the use of existing or other planned transmission systems or alternative technologies. Use of existing and planned lines is not considered feasible because at present, all lines are being utilized to capacity in the transmission systems from Arizona to southern Nevada to California. Future transmission lines now committed or under construction will have little, if any, uncommitted excess capacity after 1986. Since the Draft ER was distributed to the public, Southern California Edison (SCE) has developed plans to construct a second Devers-Palo Verde transmission line, which would not serve as an alternative to the proposed Project. The Devers-Palo Verde project is discussed in the responses to Letter 31 in Chapter 1, Table 1-2 of this document. Upgrading existing lower voltage lines in the area was also examined, but would not provide sufficient capacity increase, nor would it meet the needs for system reliability as defined by the WSCC.

Several transmission technologies were evaluated as alternatives to a new 500kV AC or DC overhead line. Underground construction of a high voltage transmission line cannot be considered a reasonable alternative because of high investment costs and technological problems for a line of this voltage and length. Voltage levels other than 500kV were considered for the proposed line, but lower voltages would not provide the required transfer capability, and higher voltages would not be compatible with existing systems.

The Draft ER included consideration of a new 500kV AC transmission line as a preferred alternative. An AC line would have had a nominal capacity of 1000 MW, and would have begun at McCullough Substation near Boulder City, Nevada and terminated at either Victorville Substation or Adelanto Substation in California. An AC line would have followed the same routing alternatives as those evaluated for a DC line, using similar towers and requiring the same right-of-way (ROW). Neither converter stations nor a ground electrode/neutral return would be required. The AC alternative was deleted from consideration as the proposed action after electrical system studies and because its capacity would have been approximately one-half that of a DC line.

The Proposed Action

As a result of system investigations, the Project Sponsors determined that the construction of a new $\pm 500\text{kV}$ DC transmission line would best meet the needs in their respective service areas. The line will begin at Mead and terminate at Adelanto. A converter station and associated facilities will be required adjacent to Adelanto Substation, and a DC bus and switchyard will be needed at Mead Substation. The line will have a nominal capacity of 2000 MW. Construction is planned to start in 1989, with an in-service date of 1991. The proposed Project is described in more detail in the following section of this Summary.

Routing Alternatives

Preliminary corridor alternatives for the placement of the proposed line were identified using multiple approaches including a subregional siting study, an agency contact program, a literature search of existing data for the project study area, and field reviews. Corridors were thus delineated and refined, prior to detailed environmental studies of alternative routes.

Transmission line route selection was accomplished in four major steps: (1) identification of initial routing alternatives, (2) comparison of those initial alternatives, (3) selection of final routing alternatives, and (4) selection of the final preferred route. Approximately 575 miles of final routing alternatives were evaluated in detail during the environmental inventory and impact assessment process.

The Project Sponsors' major criteria for route selection were licensibility, environmental concerns, engineering design and construction costs, reliability, maintainability, and the capability for locating future transmission lines adjacent to the selected route.

The BLM's major criteria for route selection were derived from a comparison of the environmental resource data for all alternatives as well as agency and public comments received on the Draft ER.

The final preferred route includes consideration of the Project Sponsors' Preferred Route and the BLM Preferred Route, as defined in the Draft ER, and comments received during the public comment and review period. Both the Project Sponsors and the BLM now propose the same route, which is described in the following section.

PROPOSED PROJECT

Facilities

Major Project facilities will include the following:

- Approximately 215 miles of $\pm 500\text{kV}$ DC transmission line;
- A converter terminal adjacent to the existing Adelanto Substation;
- A DC bus and switchyard at Mead Substation;
- A ground electrode, possibly expanding the existing system at the Intermountain Power Project (IPP) Ground Electrode Coyote Lake site, or using another location; or a neutral return at the top of the DC towers to Mead for connection to ground electrode facilities as constructed for the Mead-Phoenix project.
- Electrical modifications to existing transmission line communication facilities; and
- Access roads.

Towers for the proposed line will be freestanding lattice structures, with a typical span length between towers of approximately 1200 to 1400 feet. The conductor will be aluminum stranded with a steel stranded reinforced core (ACSR). An overhead ground wire would protect the conductors from direct lightning strikes. The ground wire may be replaced with a neutral return (as an alternative to a ground electrode). The ROW for the proposed line will generally be 200 feet wide.

Final Preferred Route

The final preferred route determined by the Project Sponsors and the BLM is similar to Alternative D, described as the Project Sponsors' Preferred Route and shown on Figure 3-8 in the Draft ER. However, three modifications to this route have been incorporated into the final preferred route, shown as Alternative DF on Figure 3-8F in Chapter 2 of this document.

The final alignment includes Link 9 rather than Links 10 and 12 in order to remain on the north side of Interstate 15 (I-15) near Baker and out of the East Mojave National Scenic Area. To avoid recreation uses associated with the Cave Mountain area, Link 16 has been substituted for Links 14 and 15. Additionally, a 1.5-mile segment of Link 16 has been modified to provide a better highway crossing of I-15. Results of the environmental analyses conducted for the modification to Link 16 are included in Chapter 2. The third change in the preferred route uses Links 41, 38 and 39 through Kramer Junction rather than Link 42, following BLM contingent utility corridors Q and P.

The preferred route (see Figure 3-8F) is 214.4 miles long, crossing 154.1 miles of public land and 60.3 miles of private land. The route follows 130.5 miles of currently designated BLM utility corridors, and parallels approximately 141 miles of existing transmission lines. The following discussion explains the reasons for selection of the final preferred route, and the process for activating BLM contingent corridors Q and P, which will be required to accommodate the Project.

Following public comment and review of the Draft ER, the BLM shifted its route preference from the Boulder Corridor, Alternative A (see Figure 3-8 in the Draft ER) to Alternative D (Project Sponsors' Preferred Route mainly located within the I-15 Corridor), with the exception that the BLM favored an alignment that passes through Kramer Junction (Links 41, 38 and 39). The Project Sponsors agreed with this change in the preferred route. The following four major considerations contributed to this shift:

1. The Boulder Corridor presently contains four high voltage transmission lines carrying the major share of the electric power used in the City of Los Angeles. At peak periods of electric power use (i.e., hot summer day) approximately 80 to 90 percent of the power supplied to the City of Los Angeles from areas outside the basin is transmitted through the Boulder Corridor. Should this power be interrupted in any way it could cause severe damage to the electrical system serving Los Angeles. Separation of a large block of power into other utility corridors will reduce the probability of such an occurrence, increasing system reliability and safety.
2. Significant opposition has arisen from the City of Victorville to more major transmission lines through Victorville (see Table 1-3 in Chapter 1 of this document). Since the Boulder Corridor is one of those identified as being primarily on private land in the vicinity of Victorville, it is to be managed as a joint responsibility between BLM and local government.
3. The I-15 Corridor has been identified by the Secretary of the Interior as one of 16 designated utility corridors planned in the California Desert between 1980 and 2000. The IPP currently holds a grant to construct a \pm 500kV DC power line in the I-15 Corridor. This would occur if additional generating units were constructed at the IPP site in Utah (see Cumulative Impacts, page 5-52 in the Draft ER).
4. The two designated BLM contingent corridors (Corridors Q and P) which will be activated to full utility corridor status to accommodate the Mead/McCullough-Victorville/Adelanto Project have been analyzed and found to have relatively low environmental resource values, relatively low construction impact potential, and have been heavily impacted by previous projects. Impacts on biological values in these corridors are felt to be mitigable.

After the BLM and the Project Sponsors agreed on an alignment in the I-15 Corridor and on the use of Links 41, 38 and 39 through Kramer Junction instead of Link 42 north of Helendale, public and agency comments on the Draft ER and further routing studies prompted two additional changes in the route.

Comments received on the portion of the route south of Baker through the East Mojave National Scenic Area urged selection of an alternative that avoided this area. Therefore, Link 9 on the north side of I-15 outside of the National Scenic Area was substituted for Links 10 and 12 on the south side of the road. Minor modifications to the boundaries of the BLM I-15 Corridor will be required to accommodate this alignment.

After field investigations, Link 16 was selected rather than Links 14 and 15 to avoid recreation uses near Cave Mountain and for engineering reasons. A final modification to Link 16 was made to cross I-15 in an area of flatter terrain and to take advantage of topographic screening provided by the Cronese Mountains. An environmental assessment performed for this modified link (see Chapter 2) revealed no significant impacts that were different from the original portion of the link.

Amendment of California Desert Area Conservation Plan and Activation of BLM Utility Corridors

The process of activating the contingent utility corridors Q and P and modifying existing corridors where required involves amending the California Desert Conservation Area Plan (CDCA) of 1980.

Construction of a 500kV power line along the proposed alignment is not completely within designated utility corridors and thus is not in conformance with the CDCA Plan for the entire length of the preferred route. The Plan designated several utility corridors across the desert to accommodate different types of utility facilities, including all transmission lines larger than 161kV. Utility projects not in conformance with designated corridors may be allowed only through the BLM's plan amendment process. The Plan must be amended to allow approval of the Mead/McCullough-Victorville/Adelanto Project.

The Plan is being amended through the EIR/EIS process and subsequent Record of Decision. In recognition of this amendment, 90 days were provided for the public review of the Draft ER as required by 43 CFR 1610. The plan amendment will activate the part of contingent corridor Q from Kramer Junction to its eastern terminus (near Afton Canyon) and the part of contingent corridor P from Kramer Junction to its southern terminus (the boundary of the San Bernardino National Forest). Additionally, minor modifications to the existing I-15 Corridor boundaries are required near the Soda Mountains, Baker, and Halloran Springs.

Figure S-1 shows contingent corridors Q and P as they are proposed to be activated to full utility corridor status in the CDCA.

AFFECTED ENVIRONMENT

The environment potentially affected by the proposed Project (final preferred route) lies within portions of Clark County, Nevada and San Bernardino County, California. Most of the study area is sparsely populated, but does include urban areas such as Boulder City in Nevada and Baker, Adelanto, Kramer Junction, and others in California.

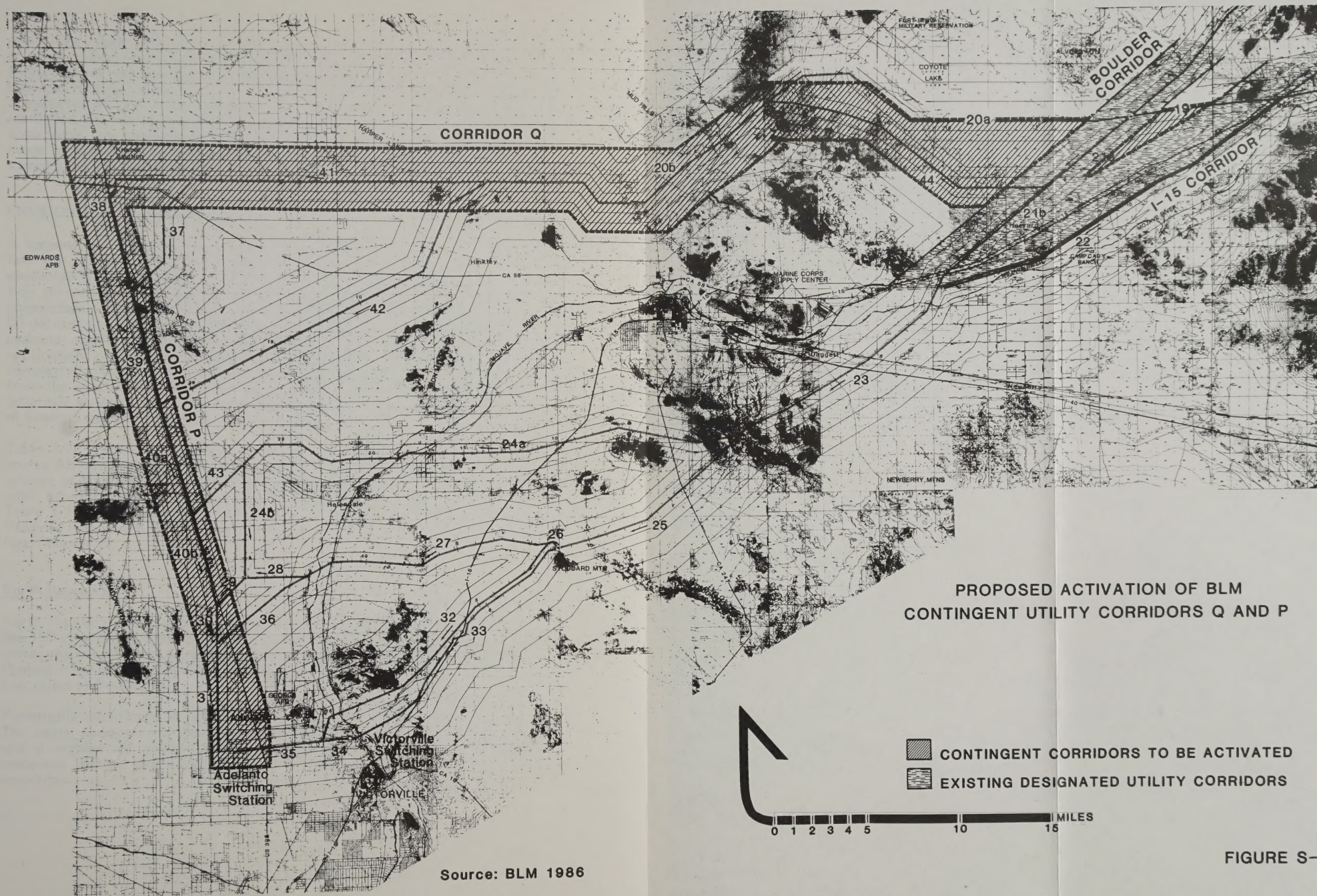
The majority of the study area is in the Mojave Desert Physiographic Province, typified by broad alluviated basins between relatively isolated mountain ranges and dissected uplands. Paleontological resources within the study area include numerous known fossil localities from at least 10 formations.

The climate of the area is typical of the region, with hot, dry summers and cool, dry winters. Precipitation is sparse and infrequent. The hydrology of the study area is characterized by internal drainage into the Mojave River or one of the dry lakes present in the area. Shallow ground water is typically present in the dry lake beds, and is usually of poor quality due to total dissolved solids.

The major types of vegetation in the study area include creosote bush scrub, saltbush scrub, blackbush scrub, Joshua tree woodland, pinyon-juniper woodland, desert wash scrub and woodland, and Mojave montane forest. There are a number of plant species in the area designated as "BLM sensitive species," but no legally protected plants. Wildlife species of particular concern in the study area are legally protected species, including the Gila monster, desert tortoise, and the Mohave ground squirrel, and species of special interest, including the golden eagle, ferruginous hawk, and desert bighorn sheep.

Land jurisdictions fall into six categories: National Park Service, public land (BLM), military reservation, California State School land, incorporated areas, and private lands. The majority of the preferred route crosses BLM and private lands. Existing land uses include residential, public, commercial and industrial, agriculture, air facilities, and vacant lands. Urban areas include incorporated cities and large-lot residential subdivisions. Numerous transmission lines and pipelines are located in the region. Agricultural land is limited in the area, generally being concentrated along the Mojave River. There are airstrips and airports in the area, and low-level training routes associated with George Air Force Base. Major highways in the area include I-15, U.S. Highway 395, and a number of state highways.

Park, recreation and preservation lands within the study area include Lake Mead National Recreation Area, approximately two miles southeast of Mead; the Rainbow Basin National Natural Landmark, eight miles north of Barstow; the East Mojave National Scenic Area, in the east-central portion of the study area; and portions of BLM Wilderness Study Areas, and BLM Areas of Critical Environmental Concern. State areas include the McCullough Mountains Natural Heritage Site. In addition, there are a number of campgrounds, scenic drives, cycle courses, and parks.



Along the study corridors, archaeological sites include habitations, lithic scatters, quarry/workshops, rockshelters, milling stations, roasting pits, rock features, and rock art sites. Two sites are listed in the National Register of Historic Places. Most of the historical sites in the study area relate to transportation and mining, and an area of high historical sensitivity was identified in the Valley Wells/Rosalie area. The study area does not encompass any contemporary Indian lands, but does include the traditional range of a number of aboriginal Native American tribes. Most of the sites inventoried are coterminous or associated with archaeological resources.

ENVIRONMENTAL CONSEQUENCES

A forecast of the environmental consequences of the proposed transmission line was derived through a process that first identified, and subsequently evaluated and integrated, initial (unmitigated) impacts and appropriate mitigation measures. The process involved (1) assessing impacts based upon a comparison of the proposed Project with the pre-Project environment; (2) determining mitigation that would avoid, effectively reduce or eliminate impacts; and (3) identifying "residual" impacts, or impacts remaining after the application of mitigation measures to which the Project Sponsors have committed. The potential residual impacts along the preferred route resulting from the construction, operation and maintenance of the proposed Project are generally summarized in the following discussion. A more detailed description of impacts can be reviewed in the Draft ER.

Table 3-9F presents a quantitative analysis of impacts for the final preferred route, Alternative DF. This table is an addendum to Table 3-9 in the map volume of the Draft ER and can be used to compare the final preferred route with other routing alternatives. The data and information presented in Table 3-9F were derived from the Draft ER and supporting Technical Report, Volumes I-IV, and from an impact assessment conducted for modified Link 16 (see Chapter 2).

Earth Resources

Earth resource issues include soil erosion potential, inundation potential from the 100-year flood, and disturbance of paleontological resources. No perennial water resources occur along the proposed route that would be affected by the Project. The route is characterized by low erosion potential, and contains only five miles of floodplain.

Potentially significant impacts were identified for paleontological resources. The route traverses moderate and high sensitivity fossil-bearing formations and a number of known fossil localities occur. Site-specific mitigation measures will be developed to avoid or reduce impacts to any identified resources.

Biological Resources

Significant types of impacts relevant to biological resources include any impact that affects officially regulated or protected species, communities or areas; interferes with migration of wildlife; alters the diversity of biotic communities or populations of plant or animal species; or affects important habitat.

The preferred route crosses 80 miles of protected plant species habitat. Wildlife habitat traversed includes desert tortoise (moderate to high density), bighorn sheep, Gila monster, and Mojave ground squirrel. After mitigation, no high impacts would result. Moderate impacts would remain for 48 miles.

Land Use

Characteristically, direct and long-term impact types for land uses include any impact that displaces, alters or otherwise physically affects any existing development of a planned residential, commercial, industrial or institutional use or activity, utility line or facility, communications facility or related activity, air facility or related activity; or affects official general or regional plans, policies, goals or operations of communities or governmental agencies.

In general, the route would have no effect on existing or planned land use. A high residual impact was assigned for two residences north of Harvard due to the probable close proximity of the line, and 0.5 mile of moderate impact would occur for recreation uses along the Barstow-Las Vegas race route. Impacts to the Baker Airport are not anticipated. Any interference with above-ground or buried utilities will be mitigated by the Project Sponsors.

Visual Resources

Typical visual impact types include impacts affecting the quality of any scenic resource; any resource possessing rare or unique value; the view from or modifying the visual setting of any residential, commercial, institutional or other visually sensitive land use; the view from a visual setting of any travel route; or the view from a visual setting of any established, designated or planned recreation, preservation, educational or scientific facility, use area, activity, viewpoint or vista. Visual intrusion of the transmission line because of structure contrast (no similar existing structures), landform contrast (new or upgraded access roads and tower foundation construction) and vegetation contrast (vegetation removal), would continue throughout the life of the proposed Project. Residual impacts usually occur in areas of high scenic quality or where the transmission line would be in close proximity to residences, travel routes, or other sensitive viewing locations.

The preferred route would result in 6.6 miles of high residual impact and 70.4 miles of moderate impact to residential views, and 15.7 miles of high and 56.5 miles of moderate impact for highway views. Recreation impacts include

ADDENDUM TO COMPARISON OF FINAL ROUTING ALTERNATIVES

FINAL ROUTING ALTERNATIVES	Jurisdictions Crossed in Miles																				Natural Environment										Human Environment															Cultural Environment	Public Resources
																					Construction Constraints			Effects On Vegetation			Effects On Wildlife				Socioeconomic/Aesthetic Impacts										Recreation/ Aesthetic Impacts					Cultural Resources Impacts	
																					Access Requirements			Desert Tortoise Density			Residence				Visual Resources Management																
Length in Miles	Private	State	Public	BLM/Prudhoe	CHC/Hoback	Military Prudhoe	Unincorporated Area	High Erosion Potential	100-Year Floodplain	New	Upgrade	Sufficient	Flotation	Desert Wetland (Crossed)	Mojave River	Special Interest (Private/BLM)	Very High	Moderate to High	Big Hole Slump	Cave Monitor	Mojave Ground Squirrel	Crossed	Within Study Corridor	Within Mile	Roadside Highway	Utilities P and Q	BLM Designated Corridor	BLM Contingency Corridor	Class I	Class II	Class III	Class IV	Estimated Annual Projected Time (2000)	BLM Recreation Area	BLM/CHC	BLM/BLCC	NV Heritage Site for National Designation	CA State Historic Eligible for National Designation	CA National Area	Archaeological	Historical	High Sensitivity	Low Sensitivity				
ROUTE OF Final Preferred Route	214.4	56.1	1.7	128.9	19.1	4.4	4.2	2.5	4.7	33.2	41.3	139.9	-	9	-	78.9	-	67.7	11.0	7.7	59.4	2	2	275	8	140.8	46.6	83.9	20.2	79.8	81.0	21	1.1	7.6	1.7	9.8	4	15.1	27.2	-	47.2						
Options	A-3	B-21	B-12	C-4	D-5	D-7																																									

Impacts (Miles) High/Moderate									Agency and Public Comments	Estimated Cost
Earth Resources	Biological Resources	Land Uses Existing	Land Uses Future	Land Uses Recreation	Visual Resources	Archaeological Resources	Historical Resources	Environmental Resources		
47.2/150.09	0.0/48.0	0.1/0.0	0.0/0.0	0.0/0.5	50.6/209.4	32.3/21.5	0.0/11.8	0.5/0.0	1. Link 45 avoids conflicts with planned private development along Link 5b. 2. Link 9 avoids East Mojave National Scenic Area and proposed East Mojave National Park, an area of concern to many commentators. 3. Mitigation proposed for Link 44 makes it acceptable to George Air Force Base. 4. Links 41, 38 and 39 follow BLM Contingency Utility Corridors P and Q. 5. Links parallel to or crossing I-15 are of concern to Baker residents, due to potential for radio and television interference.	\$85.8 million

^a Includes 47.2 miles of high sensitivity and 149.2 miles of moderate sensitivity potential resources. Impact levels do not include mitigation, which would be applied on a site-specific basis.

11.6 miles of high and 43.2 miles of moderate residual impacts. For scenic quality, high impacts would remain for 6.6 miles and moderate impacts for 70.4 miles.

Socioeconomics

The socioeconomic impact analysis addressed potential positive and negative effects on construction worker activities and expenditure and fiscal matters that would result from the construction of the proposed facilities. The maximum demand by construction workers for temporary accommodations could be met with existing facilities in each community, and community services would be adequate. Potential indirect tax revenues that would accrue to communities and taxing jurisdictions in the study area would be minimal during construction, but would be a beneficial impact of the proposed Project. Increases in property tax revenues during operation would be a significant long-term beneficial impact without requiring additional services.

Cultural Resources

Impacts to archaeological resources, which are nonrenewable, would be adverse and permanent. Construction and operation activities could result in physical or visual impact types affecting archaeological resources, sites or districts included in or eligible for inclusion in the National Register of Historic Places, or sites or areas identified as having special archaeological value. Impact levels were identified based on the evaluation of levels of sensitivity and access road requirements. High residual impacts to archaeological resources are predicted for 32.3 miles along the preferred route, and moderate impacts would remain for 21.5 miles.

Types of impacts to historical resources were identified as direct physical impacts resulting from construction-related activities, indirect physical impacts resulting from increased access, and visual impacts created by the presence of towers and lines during the life of the proposed Project. Moderate residual impacts are predicted for 11.8 miles for historical resources.

Types of impacts to Native American cultural resources include physical and aural (i.e., due to increased noise that could affect the spiritual integrity of the site). No specific identification of Native American cultural resources will be disclosed in this document because of Native American concern for the sacred nature of many sites, and the desire to protect the resources. However, with the exception of one area north of I-15, no potentially significant impacts were identified. High residual impacts would remain for this area (0.5 mile).

Other Resources

No significant potential impacts to air resources or acoustical characteristics were identified.

ELECTRICAL, BIOLOGICAL, HEALTH AND SAFETY EFFECTS

The operation of a $\pm 500\text{kV}$ DC transmission line causes electrical effects that result from corona and electrical fields (electrostatic and electromagnetic).

Based upon the design parameters and physical configuration of the proposed facilities, no objectionable audible noise nor interference with radio or television communication signals are anticipated. The levels of audible noise of the proposed DC transmission line at the edge of the right-of-way would be below the nighttime and daytime limits (45 and 55 dBA respectively) recognized for AC transmission lines. National standards of acceptable ambient levels do not exist; however, guidelines have been proven/measured in relation to existing 500kV AC systems.

Corona-produced radio interference, a function of weather, distance from line and other factors, decreases with the increasing frequency and, therefore, affects AM reception more than FM reception. The worst-case radio interference occurs on the high voltage (HV) DC systems during fair weather. Based upon experience and ongoing research of extra high voltage (EHV) transmission lines of similar design and found in similar terrain, no interference with FM or television reception in major coverage areas is expected.

Transmission lines generate minimal amounts of photochemical oxidants as a result of corona discharge. Approximately 90 percent of the oxidants are ozone, while the remaining 10 percent are composed of nitrogen oxides. The concentrations of each, however, are insignificant and no effects are anticipated as a result of the transmission line. Another corona-related phenomenon that might be observed is visible light at the point of corona called an ionic plume. These plumes may become visible when a dark background occurs.

The transmission line will be designed to limit electric and magnetic fields at the edge of right-of-way and short-circuit current from a conductive object. Electrical fields can create currents in grounded, conductive objects placed in the electrical field. Induced currents are greatest within the transmission line right-of-way, and they are, typically, very small outside of an operating DC transmission line right-of-way. At the edge of the right-of-way, the electrical field strength is typically less than one-fifth of what would be found under the positive conductor. The most significant danger is direct contact with the energized conductors.

Air ion densities and the DC electric field within the right-of-way are above ambient levels. As a result, there is extensive ongoing research into potential effects on biota caused by these two components of the electrical environment. To date, experimental evidence has not firmly established negative

effects on living organisms caused by either air ions or DC electric fields that will exist within the right-of-way. Present research suggests that these components of the electrical environment do not cause, nor do they have the potential to cause, harmful effects at the intensities anticipated.

Continuous research of these phenomena is being pursued by the electric utility industry to resolve the concerns for effects upon human health and material objects.

REGULATORY COMPLIANCE

This document is being prepared in compliance with CEQA and the CEQA Guidelines (Chapter 3, Division 6, Title 14, California Administrative Code), NEPA, and Council on Environmental Quality implementing procedures (40 CFR 1500-1508). The environmental planning, consultation and impact assessment processes have been integrated to comply with all applicable Federal and state regulations.

The evaluation of alternative routes included assessments of floodplains and wetlands, in compliance with Executive Orders 11988 and 11990, and consultation with the USFWS on biological resources. An intensive cultural resource survey will be conducted along the final preferred route prior to construction. The survey and subsequent evaluation and consultation will be in compliance with the National Historic Preservation Act, Executive Order 11593, and the regulations of the Advisory Council on Historic Preservation (ACHP) (36 CFR 800).

The Project Sponsors will also comply with applicable requirements of the states of California and Nevada, as well as county and local regulations in affected areas.

CHAPTER 1
PUBLIC COMMENTS AND
AGENCY RESPONSES

CHAPTER I - PUBLIC COMMENTS AND AGENCY RESPONSES

INTRODUCTION

This chapter describes the process followed for the public review of the Draft EA. Public comments on the adequacy of the document were collected from agencies, organizations, and individuals, and were received in the form of oral comments at public hearings and in letters.

Principal issues of public concern are addressed in Tables 1-1, 1-2 and 1-3. Where feasible, comments from letters and hearings have been summarized individually and are provided in Tables 1-4 and 1-5, respectively. Letters that could not be easily summarized are represented in full in Table 1-2.

PUBLIC REVIEW PROCESS AND PROCEDURES

The Draft EA was filed with the Environmental Protection Agency (EPA) and released to the public on June 21, 1982. Copies of the draft copy of the Draft EA and the dates and locations of public hearings requested by the Federal Register, at June 18, 1982, are were submitted to typical area newspapers for dissemination.

Approximately 250 copies of the Draft EA were sent to Federal, state and local government agencies, organizations and individuals for review and comment. In response, a total of 11 letters commenting on the Draft EA were received by EPA as Lead Federal Agency and by DWP as State Lead Agency. All written comments and transcripts of hearings may be inspected at the following location upon making prior arrangements:

Los Angeles Department of Water and Power
111 North Hope Street, Room 3121
Los Angeles, California 90011
(213) 481-5637

EPA and DWP have reviewed and carefully considered all comments and requested to those submitting comments that provided new data, significant findings, or evidence of related activities or issues related to the potential environmental impacts of the proposed Project and its alternatives, as required by the NEPA of 1969 and implementing regulations.

Formal public comment hearings on the Draft EA were conducted in Los Angeles, Glendale and Azusa on August 7, 1982, and in Burbank, California on August 10, 1982.

Tables 1-1, 1-2 and 1-3, which follow, compile the comments on the Draft EA and the agency responses provided by EPA and DWP.

CHAPTER I PUBLIC COMMENTS AND AGENCY RESPONSES

CHAPTER I - PUBLIC COMMENTS AND AGENCY RESPONSES

INTRODUCTION

This chapter describes the process followed for the public review of the Draft ER. Public comments on the adequacy of the document were solicited from agencies, organizations and individuals, and were received in the form of oral comments at public hearings and in letters.

Principal issues of public concern are addressed in Tables I-1, I-2 and I-3. Where possible, comments from letters and hearings have been summarized individually and are presented in Tables I-1 and I-3, respectively. Letters that could not be easily summarized are reproduced in full in Table I-2.

PUBLIC REVIEW PROCESS AND PROCEDURES

The Draft ER was filed with the Environmental Protection Agency (EPA) and released to the public on June 21, 1985. Notice of the availability of the Draft ER and the dates and locations of public hearings appeared in the Federal Register on June 18, 1985, and were submitted to project area newspapers shortly thereafter.

Approximately 225 copies of the Draft ER were sent to Federal, state and local government agencies, organizations and individuals for review and comment. In response, a total of 33 letters commenting on the Draft ER were received by BLM as Lead Federal Agency and by DWP as State Lead Agency. All written comments and transcripts of hearings may be inspected at the following location upon making prior arrangements:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1121
Los Angeles, California 90051
(213) 481-8637

BLM and DWP have reviewed and carefully considered all comments and responded to those substantive comments that presented new data, questioned findings of analyses, or raised questions or issues relevant to the potential environmental impacts of the proposed Project and alternatives, as required by the NEPA of 1969 and implementing regulations.

Formal publically noticed hearings on the Draft ER, at which 11 people spoke, were conducted in Boulder City, Nevada on August 6, 1985; Baker, California on August 7, 1985; and Victorville, California on August 8, 1985.

Tables I-1, I-2 and I-3, which follow, contain the comments on the Draft ER and the agency responses provided by BLM and DWP.

TABLE 1-1
MEAD/McCULLOUGH-VICTORVILLE/ADELANTO TRANSMISSION PROJECT
Summary of Letters and Agency Responses on Draft Environmental Report

Letter No.	From	Issue/Concern	Response
1	California Native American Heritage Commission	Draft ER addresses their concerns. Suggested Native American contacts.	Your comments have been noted.
2	San Bernardino County Department of Transportation, Flood Control, and Airports	Concerns regarding floodway obstruction.	See Table 1-2.
3	California Native American Heritage Commission	Reference to burial sites.	Your comment has been noted. Appropriate mitigation measures will be developed for all identified impacts to cultural resources in consultation with Native Americans.
4	Citizens for Mojave National Park	Opposed to new corridors, particularly a route through the East Mojave National Scenic Area, the area of their proposed National Park. Support a route through Keaney Pass and Silver Dry Lake. Feel that local residents were not listened to.	The Project Sponsors' and BLM's preferred route has been changed in response to your and other commenters' concerns. The revised route substantially avoids the East Mojave National Scenic Area by traversing north of I-15, still within the existing designated BLM utility corridor known as "BB." This utility corridor was identified, along with the East Mojave Scenic area, in the CDCA of 1980. See Chapter 2 of this document and Figure 3-8F.
5	California Regional Water Quality Control Board - Lahontan Region	Draft ER addresses their concerns.	Your comments have been noted.
6	San Bernardino County Museum	Concerns regarding adequacy of Draft ER paleontology study.	See Table 1-2 and Appendix A of this document.
7	Ray Weldon, U.S. Geological Survey	Supports concerns of San Bernardino County Museum.	See Table 1-2 and Appendix A of this document.
8	Los Angeles County Museum of Natural History	Supports concerns of San Bernardino County Museum.	See Table 1-2 and Appendix A of this document.
9	The Wilderness Society	Support Alternative B which follows the existing Boulder Corridor and minimizes potential significant impacts on East Mojave National Scenic Area and Clark Mountain Natural Area and Area of Critical Environmental Concern (ACEC). Oppose BLM's and Project Sponsor's preferred routes. Support establishing the Project in an existing corridor.	See response to Letter No. 4, above. The BLM considers the I-15 corridor ("BB") as an existing corridor. It was identified as one of the 16 utility corridors in the 1980 Final Plan for CDCA and contains a power line, an oil pipeline and coaxial cable. The western half of the preferred route would be located in two contingency corridors identified in the CDCA Plan of 1980.

Table 1-1 (continued)
Summary of Letters and Responses

Letter No.	From	Issue/Concern	Response
10	U.S. Department of the Interior, Bureau of Indian Affairs	Project has no effect on Indian lands.	Your comment has been noted.
11	Resources Agency of California	Letter of transmittal for California Department of Transportation (CALTRANS) comments.	None required.
12	CALTRANS	Review and permitting requirements.	See Table 1-2.
13	Pacific Bell (Anaheim)	Concerns about impacts on their facilities.	See Table 1-2.
14	California Office of Planning and Research (State Clearinghouse)	Notice of Review Completion.	None required.
15	Lucille B. Skinner	Opposes any route south of I-15 near Baker. Supports a route through Silver Dry Lake. Would like to have her complaint registered with EPA.	See response to Letter No. 4, above. While the final preferred route does not pass through Silver Dry Lake, it is proposed to be located on the north side of I-15 near Baker. All comments received on the Draft ER are forwarded to the reviewing agencies, including EPA, as part of the Final ER.
16	Jim and Vee Alexander	Support Project Sponsors' Draft ER preferred route west of Barstow and north of Victorville and Adelanto.	The final preferred route agreed upon by both BLM and the Project Sponsors remains west of Barstow and north of Victorville and includes Links 41, 38 and 39 through Kramer Junction. This alignment was selected in order to remain within the BLM's contingency utility corridors "Q" and "P" as defined in the 1980 CDCA Plan. This alignment parallels existing transmission lines (Coolwater-Kramer 220kV and Victor-Kramer 220kV) for its entire length. See Draft ER Figure 4-7 and Figure 3-8F in Chapter 2 of this document.
17	Vince and Judy Apple	Concerns regarding electrical and health effects, land use, and alternative routes.	See Table 1-2.
18	Southern California Edison Co.	Concerns regarding I-15 corridor and potential effects on their facilities.	See Table 1-2.
19	Nevada Office of Community Services (State Clearinghouse)	Transmittal letter for agency comments.	None required.
20	Nevada Department of Wildlife Resources	Project will have little or no additional impact on wildlife of the area or its existing habitat.	Your comments have been noted.

Table 1-1 (continued)
Summary of Letters and Responses

Letter No.	From	Issue/Concern	Response
22	Nevada Division of Environmental Protection	Construction-related air quality impacts must be mitigated by using good construction practices. Best Management Practices must be followed to control sedimentation and water contamination. Local permits may be required.	Your comments have been noted. Air and water quality impacts will be mitigated, and all required permits will be obtained.
23	Nevada Division of Historic Preservation and Archaeology	Requested copy of Cultural Resources Technical Report.	A copy was sent on September 24, 1985.
24	Jim and Betty Stone	Opposed to use of Links 24A and 27. Not opposed to use of Links 33, 41 or 42.	The preferred route does not use Links 24a, 27, 33 or 42. It does include Link 41.
25	Mark A. Roeder	Supports position of San Bernardino County Museum regarding paleontology studies.	See Table 1-2 and Appendix A of this document.
26	Helendale Residents Against DWP Power Line	Local homeowners are opposed to use of Links 24A and 27. No objection to Links 42, 33 and 41.	See response to Letter No. 24, above.
27	Silver Lakes Association	Community opposes use of Links 24A and 27.	See response to Letter No. 24, above.
28	U.S. Environmental Protection Agency	Comments regarding soil erosion, water quality, herbicide application, and permit requirements.	See Table 1-2.
29	U.S. Department of the Interior, Fish and Wildlife Service	Biological resources mitigation recommendations.	See Table 1-2.
30	Pacific Bell (Pasadena)	No objections to Project. Requests coordination in siting towers in the Baker area to avoid microwave paths.	Your comments have been noted. Pacific Bell will be contacted regarding tower locations relative to microwave transmitters.
31	California Public Utilities Commission	Concerns regarding impact of the Project on the existing electrical system and on other proposed projects.	See Table 1-2.
32	George Air Force Base	Recommendations for mitigating impacts on flight operations.	See Table 1-2. Comments previously submitted by George Air Force Base at public hearings on the Project are reproduced in Appendix B of this document. These concerns were subsequently satisfied through discussions with the Project Sponsors, as documented in Table 1-2.

LETTER 2
COMMENTS

DEPARTMENT OF TRANSPORTATION/
FLOOD CONTROL/AIRPORTS

825 East Third Street • San Bernardino, CA 92415-0835 • (714) 383-1665



COUNTY OF SAN BERNARDINO
ENVIRONMENTAL
PUBLIC WORKS AGENCY

MICHAEL G. WALKER
Director

July 2, 1985

File: 4-100/1.00
6-200/1.11

City of Los Angeles
Department of Water & Power
Box 111
Room 1121
Los Angeles, CA 90051

Attention: Mr. Carl D. Haase,
Engineer of Environmental
and Governmental Affairs

Re: Zones 4 & 6, Mojave River,
Coolwater System and the
Daggett Airport System

Gentlemen:

Reference is made to your letter dated June 21, 1985 with accompanying Draft Environmental Report, requesting the District's review and comments. The transmission line is proposed from the Mead Substation in Nevada to the City of Adelanto in San Bernardino County, California.

The Mead/McCullough Transmission Project has proposed five alternate routes. Alternate A, the BLM preferred route, crosses the Mojave River three (3) times and passes between the Coolwater System and the Daggett Airport System. Alternates B, C, D and E cross the Mojave River once (1). This Aerial Transmission line is of little note to the District as long as the transmission towers do not occupy or obstruct drainage paths.

Our recommendations are as follows:

- A [1. Do not occupy or obstruct major or minor drainage courses.

- B [2. A permit will be required for any encroachment onto Flood Control District right-of-way, and a minimum of six (6) weeks processing time should be allowed.

TABLE I-2

RESPONSES

- A Towers along the final preferred route will not be located within major or minor drainage courses because such locations would jeopardize the integrity of the towers and would diminish the carrying capacity of the course within its normal boundaries. The only exception to this criteria is if a crossing at the Mojave River were to be required through the use of an alternative route other than the final preferred route. The drainage course width may be too great to allow crossing in a single span; in this case a tower may be located within the drainage course and such design would be coordinated in detail with the appropriate agencies.

- B All required permits will be obtained.

LETTER 2 CONT COMMENTS

- C [3. If Alternate A is picked as the route for the transmission project; coordination with the District as to placement of the transmission towers in the vicinity of the Coolwater System and the Daggett Airport System will be required.

Should you have any further questions concerning this matter, please feel free to contact the undersigned at (714) 383-2388.

Very truly yours,

ALLAN J. KIELHOLD, Chief
Water Resources Division

AJK:MGM:mjs

RESPONSES

- C. The preferred route is not located in the vicinity of the Coolwater Power Plant or the Daggett Airport. See Figure 3-8F in Chapter 2 of this document.

LETTER 6
COMMENTS

SAN BERNARDINO COUNTY MUSEUM

2024 Orange Tree Lane • Redlands, CA 92373 • (714) 792-1334 & 825-4825



COUNTY OF SAN BERNARDINO
GENERAL SERVICES AGENCY

DR. ALLAN D. GRIESEMER
Director

July 19, 1985

Dr. Carl D. Haase
Engineer of Environmental and Governmental Affairs
Department of Water and Power
P.O. Box 111, Room 1121
Los Angeles, CA 90051

Dear Dr. Haase,

I have reviewed the June 1985 Draft Environmental Impact Report for the Mead/McCullough-Victorville/Adelanto Transmission Project. This report does not adequately address paleontologic resources.

- A [(1) The inventory of paleontologic sites is incomplete. I am aware, and our records show, one or more paleontologic sites in Links 5, 6 (multiple localities), 7, 8, 9, 12, 13, 14, 16, 18, 20a, 20b, 21a, 21b, 38, 37, 24a, 23, 27, 34 and 35. The report does not mention any of these known resources.
- B [(2) Of those sites mentioned in the report, no site-specific evaluations discussing the significance of the sites are made.
- C [(3) No site-specific mitigation measures are proposed.
- D [(4) There is no map of paleontologically sensitive areas such as are afforded other resources. The inadequacy of this document in regard to non-renewable paleontologic resources indicates that the compilers did not include a paleontologist and that institutions, groups, or individuals with interest in or knowledge of paleontologic resources were not consulted. This obvious disregard of paleontologic resources in areas of extreme sensitivity and significance will, if not rectified, cause irreparable and irreversible impacts to non-renewable resources which are protected by Federal and State law. I urge that this Draft EIR be ruled unacceptable until paleontologic resources are adequately addressed.

Sincerely,

Robert E. Reynolds
Curator, Earth Sciences

RER/jr

RESPONSES

- A Appendix A of this document presents a summary of a paleontological resources study conducted for the Final EIR, in response to comments received. A complete records search was conducted for this study of all available relevant archives. A technical report documenting the inventory of paleontological resources is available to qualified researchers.
- B This information is available in the paleontological resources technical report.
- C Site-specific mitigation measures will be developed as a result of detailed preconstruction surveys of selected construction sites along preferred route. General types of mitigation effective in reducing predicted impacts to paleontological resources are described in Appendix A.
- D This map is included in the technical report, available only to qualified researchers. Its distribution is limited to protect the known location of these resources.

LETTER 12 COMMENTS

State of California

Business and Transportation Agency

Memorandum

To : State Clearinghouse
Office of Planning & Research
1400 10th Street
Sacramento, CA 95814

Attention: Peggy Olson

Date: July 29, 1985

File : 08-A0222921
SR-15-02/196,239
SR-105-11.13/37,839
SCH 84112821

From : DEPARTMENT OF TRANSPORTATION
District 8

Subject: DEIS/DEIR- Mead/McCullough-Victorville/Adelanto
Transmission Project

We have reviewed the above-referenced document and request consideration of the following:

- A [The crossing sites should be reviewed for conflicts with future State highway projects. When the adopted route is known and the crossings are finalized, we can make specific recommendations.
- B [Crossing of State highways will require highway encroachment permits. We urge early and continuous liaison with Caltrans on proposed plans as they affect State highways.
- C [We would like a copy of the final document as soon as it is available.

If you have any questions, please contact Marie J. Patry at (914) 293-4100

Guy G. Vissal

GUY G. VISSAL
Chief, Transportation Planning
Branch A

MP:gc

RESPONSES

- A When the final transmission line alignment is established, plans for this alignment will be forwarded to the State of California, Department of Transportation, for review and comment regarding future state highway projects.
- B All required permits will be obtained. Requirements will be determined through coordination with CALTRANS.
- C Your agency is on the distribution list to receive the Final ER.

LETTER 13 COMMENTS

August 8, 1985

Gerald E. Hiller, District Manager
Bureau of Land Management
California Desert District
1695 Spruce Street
Riverside, California 92507

Dear Mr. Hillier,

Please use this letter as a notice that there may be a conflict with Pacific Bell's communication facilities in the Baker area with the proposed 500,000 volt transmission project being built by the Los Angeles Department of Water and Power.

I understand at this time final routing has not been selected. The routes that run north of Interstate 15 from the California - Nevada state line to an area approximately 35 miles west of Baker appear to have no conflict with our facilities. However, the preferred route by the DWP has three possible interferences.

A [First, all long distance incoming and outgoing calls for Baker are microwaved to Kelso Peak. It is possible that the microwave beam may be crossing the corona of the proposed line.

B [Second, telephone services to the Rasor Road area west of Baker, is fed by open wire with an analog carrier system. Open wire is extremely susceptible to electrical induction and can not be used in the close proximity with high voltage. In addition, the analog carrier transmits on FM bands from 12 to 152 KHz, this is above and below the 88 to 108 MHz rarely affected by corona generated radio interference.

D [Lastly, Pacific Bell has cable from Baker to Mountain Pass and it may be crossed by the proposed transmission lines.

E [Aerial telephone facilities and ultra-high voltage lines are not compatible. The conflicts are not without solutions. The California Public Utilities Commission requires Pacific Bell to make contractual agreements with the power companies to recover all cost associated with rearranging our facilities to accommodate the new power lines.

PACIFIC BELL

3929 East Coronado Street
Second Floor
Anaheim, California 92807

RESPONSES

A [Electromagnetic Interference (EMI) to microwave communications systems caused by electric power transmission lines has not been a concern. Corona-produced EMI decreases with increasing frequency and it is unlikely that interference would be detected at microwave frequencies.

B [Open-wire telephone lines are susceptible to electromagnetically induced noise caused by harmonic currents present on the power system. The induced noise will generally be lower at carrier frequencies than at voice frequencies because higher order harmonics occur on the power system at lower levels.

C [Communication lines which cross or parallel near the transmission line will be identified prior to construction and the respective utility will be contacted. Mitigation programs will be implemented based upon the predicted level of induced noise from the transmission line and susceptibility of the communication system to such noise.

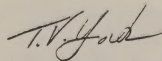
D [When compared with open-wire lines, cable systems inherently have greater immunity from induced noise. The susceptibility to noise varies with overhead and underground cables, proximity to the power line, angle of crossing, and method of cable shielding.

E [The mitigation program will address crossing of communication cables on a case-by-case basis with the intent of restoring, at project expense, any affected facility to conditions which existed prior to operation of the transmission line.

LETTER 13 CONT COMMENTS

If I may be of any additional assistance or you require more information, please feel free to call. My telephone number is 714-999-5515.

Sincerely,



T. V. York
Engineer

TVV/bs

cc: James Mieding
Los Angeles Department of Water and Power

COMM-FBI
JUN 13

COMM-FBI
JUN 13

COMM-FBI
JUN 13

LETTER 17 COMMENTS

VINCE & JUDY APPLE
497 E. 16TH ST.
TUMAC, AZ 85364

September 3, 1985

Dear Mr. Haase:

I have enclosed a letter which I have sent to Mr. Gerald Hillier of the Bureau of Land Management. We feel that the proposed high voltage electrical transmission lines will be doing the town of Baker an injustice. The area in question was not previously built on due to the fact that the town needed somewhere to grow and this was the place. With this area made into a no-man's-land and the rest of the area around Baker almost totally made into Wilderness areas, there is no place for the town of Baker to grow and prosper.

How about considering taking the lines down the pathway of the current power transmission lines and leave the other side of the freeway for Baker to grow?

We will be awaiting for your reply, we remain

Sincerely,

Vince and Judy Apple
Vince and Judy Apple
Baker property owners

LETTER 17 CONT COMMENTS

NOTE: This letter has been reproduced due to the poor quality of the original.

September 3, 1985

Gerald Hillier
Bureau of Land Management
1895 Spruce Street
Riverside, CA 92507

Re: Proposed High Voltage Electrical Transmission Lines - Baker, CA

Dear Mr. Hillier:

As one of the three or so land owners whose land is near the Baker, California proposed high voltage electrical transmission lines we felt compelled to provide you with our concerns. We were not able to attend the meeting that was held for us to express our comments as we are living in Yuma, Arizona and were not notified by anyone about such a meeting. Luckily for us we do read the Baker newspaper and found out about it.

Not only are we concerned about losing part of our 20 acres near the freeway off ramp to the power line right-of-way, but the usefulness of the remaining land. We were planning to establish a business on our property which with the addition of the powerline would be hazardous to ourselves and those who would be served by us.

As this type of power line has been already established in the Yuma area, we have found through experience and the experiences of our customers that this type of high voltage electrical lines:

- A [-- cause a constant "hum" which is extremely irritating especially to those individuals who work or reside in metal buildings (i.e. trailers, mobile homes, and metal shop buildings)
- B [-- cause radio transmission to become totally inoperable due to a constant static interference affecting emergency vehicles as well as private vehicles (i.e. ambulance, fire trucks, police/sheriff/highway patrol, tow trucks, C.B. radios as well as car radios)
- C [-- cause a serious threat to those with medical implants who might venture to close to the power lines or might have vehicle difficulties within a one mile radius of the lines (i.e. pacemakers, etc.)

RESPONSES

- A Please refer to page 5-33 of the Draft ER. While audible noise is an effect of corona, it is typically experienced only within and immediately adjacent to the right-of-way. It may increase during inclement weather. No structures will be permitted within the right-of-way, and, in fact, no structures are located along the preferred route that would be close enough to the line to experience this "humming."
- B Please refer to pages 5-33, 5-38, 5-39 and 5-41 of the Draft ER, and to the response to hearing comment H2-B provided in Table 1-3. Impacts that are identified to emergency radio reception can and will be mitigated.
- C An examination of available data indicate that electrical currents present in the body when near the DC transmission line are very low and would not affect cardiac pacemakers. There is no reason to believe that currents at these low levels would be harmful or injurious.

Considerable research has been conducted on the possible effects of AC electric fields on cardiac pacemakers, as described in Appendix E, page E-16 of the Draft ER. To date, no evidence has been found that a transmission line has caused a serious problem to pacemaker wearers.

LETTER 17 CONT COMMENTS

D -- cause anything not grounded to become electrically charged which would affect vehicles that would have mechanical difficulties possibly causing serious electrical shock or causing vehicles loaded with combustible type materials to catch on fire

E -- Put land within a one mile radius in a "no-man's-land" type situation.

F Is there a good reason why the proposed lines can't follow the already established route of power lines? We can't think of any reason why these new lines can't follow in their pathway and preserve the land around the town of Baker so that it can grow and prosper.

We will be anxiously awaiting your reply and notification as to what is to happen to our property as well as what is to happen to the property of those around us.

Sincerely,

Vince and Judy Apple.

RESPONSES

D The interaction of the electric field and ion current with persons and objects could lead to mild and sometimes perceivable effects, including induction of steady-state DC currents, spark-discharge shocks, and direct perception of the field through hair stimulation. However, these effects are not hazardous, and because of their infrequent occurrence, they are at most a possible nuisance near the proposed line. These effects have no identifiable public safety implications. Standard DWP grounding procedures will be followed, eliminating any shock potential from the proposed line.

E Your comment has been noted.

F A major factor in planning new transmission lines is reliability of the line and the overall system, including the ability to continue electric service delivery in the event of an outage. Currently, the majority of power delivered to Los Angeles is carried through the Boulder Corridor. Adding another line to this corridor was determined to pose an unacceptable reliability risk in the event of an emergency such as floods, earthquakes, aircraft collision, sabotage or fires in which all lines in this corridor could be affected. One of the major factors leading to the selection of BLM's I-15 Utility Corridor over the Boulder Corridor was the ability to maintain separation from major existing transmission lines. The Boulder Corridor already contains a 287kV and two 500kV AC Boulder Transmission Lines, and the 2500kV IPP DC Transmission Line. Therefore, this corridor is considered fully developed under present limiting conditions (W5As along boundaries, etc.). By utilizing the comprehensively studied BLM designated I-15 Corridor between the California/Nevada border and the Mojave Valley, by offsetting the proposed transmission line up to 0.25 mile from the four existing lines on Link 21a, and by then continuing into Adelanto via Kramer, the preferred route avoids paralleling all four of the existing lines at one time. Refer to Letter 33 below for further explanation of reliability issues.

LETTER 18
COMMENTS

Southern California Edison Company

P.O. BOX 410
100 LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA 90801

REAL PROPERTIES DEPARTMENT

TELEPHONE
(213) 491-2927

RESPONSES

Mr. Carl D. Haase
Engineer of Environmental
and Governmental Affairs
Department of Water and Power
P.O. Box 111, Room 1121
Los Angeles, CA 90051

September 5, 1985

Dear Mr. Haase:

SUBJECT: Draft Environmental Report (DER)
Mead/McCullough-Victorville/Adelanto 500 kV T/L

Southern California Edison Company has reviewed the subject DER and offers the following comments for your consideration.

Most of our concerns are known by LADWP through many previous meetings and correspondence.

A [As stated in our letter of December 14, 1984, it is our position that prior to the issuance of any grant authorizing construction of a transmission line right of way within the I-15 Corridor, A "Corridor Plan" is to be developed and submitted for approval by the Bureau of Land Management (BLM).

We were pleased to see the Bureau's preferred route alignment was changed to add Alternate D, Segment C-4 (Links 19, 21a, 44, 20b), traversing northerly of the Coolwater Generating Plant area.

B [We also note that most all alignments would cross Edison line facilities, both transmission and distribution voltages, at numerous locations in the Barstow area. We would, therefore, expect that these crossings be protected from all construction activity. In addition, the cost for any work performed by Edison to accommodate the proposed LADWP line would need to be reimbursed to Edison.

Thank you for inviting our comments and trust you will give them full consideration in the development of your final report. If further details are needed, please contact Mr. J. R. Wilson at (213) 491-2880.

Very truly yours,

DALE L. WOODWARD
DALE L. WOODWARD
LAND PROJECTS SUPERVISOR

932s

cc: J. Mieding - LADWP
W. H. Collins - BLM

A Final alignment of the transmission line within the I-15 Corridor will take into account the possibility of future transmission facilities. Sufficient information will be provided to BLM prior to final alignment approval to allow BLM to make a determination concerning the use of the I-15 Corridor.

B Good engineering practices will be followed in designing the crossings. Guard structure systems acceptable to Southern California Edison Company (SCE) will be used during construction activities. Should any SCE facilities need to be altered for the crossings, the expense of such alteration will be paid by the Project.

LETTER 21 COMMENTS

RICHARD H. BRYAN
Governor

STATE OF NEVADA



LINDA A. RYAN
Director

STATE OFFICE OF COMMUNITY SERVICES

Capitol Complex
Carson City, Nevada 89710
(702) 885-4420
30 July 1985

To: John Walker
Nevada State Clearinghouse
From: Thomas H. Henderson
Subject: Mead/McCullough--Victorville/Adelanto Transmission Project

A This agency's comments relate to the need for the project. There are several reasons why alternatives to the proposed transmission line should be considered:

- the project will encourage future exploitation of air and water resources of adjoining states
- the more cost effective electricity demand side measures apparently were not given serious consideration
- the existing general transmission corridor between Southern Nevada and Southern California is already overbuilt; another line is merely a temporary solution to the apparently endless appetite for electricity. Dieting is recommended.

Transmission lines are convenient means of exporting negative externalities associated with conventional electricity production. However, with respect to Stages II and III air quality alerts in the Los Angeles Basin, it is not clear from the draft environmental report how power sources can be suddenly shifted. This would have to be written as a condition of the power sales contract. Local vehicle trip reduction should be the primary mitigation during air quality alerts. The policy of adjoining states "bailing out" the Los Angeles Basin during air quality alerts is one that should not continue, as the frequency of such alerts is likely to increase. When projects such as this are built, it simply encourages the folly of building regional energy centers to supply electricity to capacity-short utilities hundreds of miles distant.

The report refers to the availability of economy and surplus energy. Both of these terms are misnomers. The price of electricity generated from new coal and nuclear plants can hardly be characterized as economical, even by California standards. It may actually be as costly as oil-or-gas-generated electricity. To suggest that such electricity is surplus implies that the sponsors are relieving the power producers of a resource that would not otherwise be used, when in fact, the sponsors have likely been negotiating for a share of the power several years prior to its availability. Surplus economy energy may be fitting to describe hydroelectricity purchased from the Northwest, but in this instance, it is misleading.

RESPONSES

A The Project Sponsors have analyzed the impact of demand-side load management on their power systems. For example, DWP has studied a large number of potential conservation measures in the development of its load forecast and resource plan and has included those measures which can be demonstrated to be cost-effective in its resource plan; the resource plan is used as the basis to determine need for the proposed project.

The occurrence of a Stage II or Stage III air quality alert can typically be anticipated with sufficient lead time to plan for curtailment of in-basin generating units and to acquire energy from other resources. There would be no sudden shifting of resources. These types of transactions are based on the availability of capacity and energy and their associated costs. Construction of the Project would allow for larger amounts of energy and capacity to be transmitted to the California utilities with a resultant greater capability to curtail local generation in the event of air episodes.

Southwest utilities that own and operate their own generating resources (including new coal and nuclear plants) periodically do not have sufficient demand to fully utilize their resources. If they can sell this unused energy at a price equal to or greater than the incremental price of producing it, then the utility receives an economic benefit. This "economy energy" benefits both parties to an economy energy transaction: the buyer purchases energy at a cost less than its cost of producing energy and the seller receives income that would not otherwise occur. Construction of the proposed project will expand the opportunity for economy energy transactions including existing generating resources.

Several petroleum refineries in Los Angeles County have installed or plan to install cogeneration facilities. For example, Texaco has installed a 60 MW cogenerator at its facility in Wilmington, California. Nearby, Union has installed an 8 MW cogenerator with plans for an additional 35 to 70 MW at a later date. Construction and operation of these facilities are limited by air quality concerns. The Project Sponsors have encouraged the addition of cogeneration facilities. DWP pays its avoided cost to cogeneration facilities for any energy provided. In addition, DWP will provide transmission wheeling to cogenerators to transmit the energy to cogenerators' other facilities within DWP's service territory or to a neighboring utility which may offer a higher avoided cost payment.

LETTER 21 CONT COMMENTS

A In reviewing the document's listing of demand-side utilities, it appears this alternative may have been treated lightly. Conservation (demand side) measures should go far beyond public relations or education, and government-mandated residential and commercial energy audits. For example, what direct incentives are offered utility customers to use heat recovery, high efficiency motors, compressors, appliances, or evaporative cooling? None of the listed utility generation mixes showed significant amounts of cogeneration. This is somewhat perplexing given the widespread enthusiasm for small power production and cogeneration in California. Are participating utilities making it difficult for such projects to come on-line? The major petroleum refineries in Los Angeles County are excellent prospects for cogeneration plants. The utility conservation programs outlined in the draft report suggest that mere token measures have been implemented to offset increasing electricity demand. A serious effort in conservation and load management could at least mitigate, if not supplant, the need for future expansion of interstate transmission capacity.

The proposed project comes across as a "Band-Aid" solution to a chronic problem. While it is prudent to capitalize on interregional differences in seasonal utility peaks related to climate, this advantage does not exist here. Project sponsors need to diversify resources within their service areas, with conservation and load management representing major resource acquisitions. Utility effort in this area should receive close scrutiny by reviewing agencies before approving any proposals for capacity expansion--transmission or generation.

THH/1

TO John Walker, Nevada State Clearinghouse

FROM James P. Hawke, Chief, Energy & Community
Development

SUBJECT Mead/McCullough Draft Environmental Report

Memo

DATE July 31, 1985

Attached, herewith, are comments from this agency prepared by Thomas H. Henderson. In addition to the comments from Mr. Henderson, I would like to make the following observations.

B With respect to the environmental consequences of the proposed action, I cannot find any mention of the impacts on Nevada's water resources. Not only will the direct construction have a potential impact on water resources, the generation of electricity has a major impact on Nevada's water resources.

RESPONSES

A While cogeneration is an effective source of energy, it is not an alternative to the Project. Cogeneration projects are developed by third parties; DWP and other Project Sponsors have no direct control over the development and availability of such facilities. Therefore, utility resource planning needs to consider the announced plans of cogeneration developers but must also plan for utility-controlled resources in the event that planned cogeneration projects are not completed. More importantly, the utility pays for energy supplied by cogenerators at the utility's full avoided cost, while economy energy resources are typically available at much lower costs. Therefore, cogenerated energy cannot economically be substituted for economy energy made available through development of the proposed project.

While true that electric utilities that are participating in the project are summer peaking, those in California do not necessarily experience peak demands at the same time as the utilities in the Southwest. In addition, the utilities in the Southwest have a wide spread between peak and off-peak demands, providing ample opportunity for off-peak transactions. The construction of the Project would increase the capability for diversity exchanges at the time of regional peak demands.

B The types of water resources occurring in the study area are described in the Draft ER on page 4-5. Potentially significant water resource impacts associated with transmission line construction include adverse effects of erosion and sedimentation on perennial rivers and streams, springs and municipal water supplies. With the exception of short reaches of the Mojave River in California, none of these types of water resources were identified within the study area, which is, rather, characterized by ephemeral drainage and dry lakes. Transmission line construction is not expected to affect ground-water resources. As stated on page 5-4 of the Draft ER, our impact assessment methodology was designed to determine which earth resources, if any, may potentially be affected by transmission line construction and/or operation. The results of this analysis showed that only soil erosion patterns and paleontological resources have the potential to be significantly affected by the project. Further details of the inventory and assessment are presented in the Technical Report to the Draft ER, Volume II, Natural Environment.

While it is undoubtedly true that the generation of electricity has a major impact on Nevada's water resources, hydroelectric power generation is neither a direct nor cumulative impact of the Mead/McCullough-Victorville/Adelanto Project. The primary purpose of this Project is to capture existing, and particularly surplus, electricity already being generated from a variety of sources in addition to hydro.

LETTER 21 CONT COMMENTS

- C With regards to the socioeconomic impacts of the project, I do not find any mention of the impacts to community infrastructure including roads, bridges, sewer and wastewater facilities, police and fire protection, and other support services.

- D With regards to fiscal impacts, the environmental report states that for the project sponsors' preferred route, the estimated property taxes for the Nevada portion of the route would be \$19 per year. (5-19) On page 4-29, the statement is made in paragraph 4 that "within Clark County, the right-of-way land and improvements would add significantly to the total assessed value of tax district 100 as well as to the county's overall base of assessed value. I'm not sure how the authors of this environmental report arrived at this conclusion. In looking at the references they provided for this, on page A-12 the last entry for personal communications reads; Waite, Ms. Cowpeth. This citation is incorrect.

- E On page 5-44, the potential for increased problems with corrosion is addressed. There is insufficient information presented on this topic to assess the fiscal impacts. Currently, there is a substantial level of corrosion problem in Southern Nevada which necessitates the use of cathodic protection for telephone lines, water lines, sewer lines, and other buried utilities.

RESPONSES

- C Community infrastructure impacts of transmission line construction are of a temporary nature and not considered significant. The Project access plan will identify existing access roads, such as I-15 and other main routes, to the Project vicinity that are capable of supporting construction vehicles and traffic. Sewer and wastewater facilities would not be affected by the Project either on a short- or long-term basis. As described on page 5-17 of the Draft ER, the maximum number of construction workers for the Project is expected to be 120, working sequentially over a 24-month period. While there may be short periods when some of these workers find accommodation in smaller communities along the route, all such communities have sufficient wastewater facilities to serve visitors. Regarding police and fire protection, it has never been our experience that construction and operation of a transmission line necessitated a project-related increase in either local police or fire protection personnel or facilities. In summary, the dispersed nature of transmission line construction activities, the relatively small numbers of construction workers required, and the short duration of construction are the factors that result in a determination of minimal impact to community infrastructure. On a long-term basis, transmission lines are considered growth-accommodating rather than growth-inducing, as described on pages 5-46 and 5-47 of the Draft ER.

- D The presentation of this material may be somewhat confusing. To provide clarification, there are two contributing components to the total assessed value referred to on page 4-29. Since the Project Sponsors are non-local entities in the State of Nevada, they are subject to taxation based on the land value of the right-of-way as well as to the value of improvements (transmission towers). As public utilities operating in the State of California, they are exempt from taxes on improvements, and pay only the assessed value of land. Page 5-19 and Table 5-3 present annual taxes on land only, in order to be consistent for both states.

In Nevada, the annual additional taxes on improvements that would accrue are estimated to be the following:

- Property taxes on transmission line - \$158,000 during the first full year of operation and \$4.0 million over the life of the Project, accruing to Clark County (Tax District 100).
- Property taxes on Mead Converter Station - \$847,000 during the first full year of operation.
- State of Nevada use tax on transmission line - \$820,000.

Calculation of these estimates is provided in the Technical Report accompanying the Draft ER (Volume III, Human Environment).

- E The fiscal impacts of potential corrosion to underground utilities cannot be estimated at this time. A site for the ground electrode, if a neutral return is not used, has not yet been selected, nor have the exact locations of buried utilities relative to the transmission route and ground electrode site been determined; this undertaking will be part of the preconstruction surveys and right-of-way acquisition. Second, the extent and level of corrosion that may or may not occur cannot be predicted until the line is operable. Possible mitigative measures to counteract corrosion are described in the Draft ER, pages 5-45 and 5-46. As stated, it is the intention of the Project Sponsors to correct corrosion problems caused by the Project, where possible and practical, at the expense of the Project.

LETTER 21 CONT COMMENTS

- F [Finally, I would like to have seen the authors of this draft environmental report address the consequences of "no project".

JPH/1
Attachment

RESPONSES

- F The No Project alternative was discussed in the Draft ER, page 3-1. Regarding your references to obviating the need for the Project through implementation of additional conservation measures, the Project Sponsors wish to stress that conservation programs have increasingly been included in their load forecasts and resource plans. For example, DWP has studied a number of conservation measures and has developed those programs which offer cost-effective energy savings to its ratepayers. Conservation measures are expected to reduce energy consumption by 16 percent in 1990.

COMMENT 2
LETTER 21 CONT

REVISIONS

LETTER 28
COMMENTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
215 Fremont Street
San Francisco, Ca. 94105

16 SEP 1985

Gerald E. Hillier, District Manager
U.S. Bureau of Land Management
California Desert District
1695 Spruce Street
Riverside, California 92507

Dear Mr. Hillier:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) titled MEAD/MCCULLOUGH-VICTORVILLE/ADELANTO TRANSMISSION PROJECT, CLARK COUNTY, NEVADA AND SAN BERNARDINO COUNTY, CALIFORNIA. The DEIS was well written and described the issues in a well documented manner.

We have classified this DEIS as category LO, Lack of Objections (see attached "Summary of Rating Definitions and Follow-Up Actions"). The classification and date of EPA's comments will be published in the Federal Register in accordance with our public disclosure responsibilities under Section 309 of the Clean Air Act.

We appreciate the opportunity to review this DEIS. Please send two copies of the Final Environmental Impact Statement (FEIS) to this office at the same time it is officially filed with our Washington, D.C. office. If you have any questions, please contact Patrick J. Cotter, Federal Activities Branch, at (415) 974-0948 or FTS 454-0948.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Charles W. Murray, Jr.".

Charles W. Murray, Jr.
Assistant Regional Administrator
for Policy and Management

LETTER 28 CONT COMMENTS

General Comments

- A 1. EPA recommends a firm commitment to soil erosion mitigation that will protect water quality of desert streams, both during and after access road construction. The section of the DEIS that deals with this mitigation should be expanded to include site-specific mitigation plans for potentially disturbed riparian and aquatic habitats. A plan to actively restore all disturbed riparian zones intersected by the transmission line right-of-way is preferred.
- B 2. We recommend that the BLM coordinate with the U.S. Army Corps of Engineers (COE) to determine whether the proposed project is covered under a General Permit, or will require an individual permit(s) for areas receiving discharges of fill material in waters of the United States. The discharge of fill material in waters of the United States, unless permitted under a General Permit, must comply with provisions of the Federal Guidelines (40 CFR 230), promulgated under Section 404(b)(1) of the Clean Water Act. A letter documenting coordination with COE should be presented in the FEIS.
- C 3. The FEIS should discuss the potential "chemical treatment" of the transmission corridor that is mentioned on page 3-16. If herbicide application is anticipated, the FEIS should devote a section of the Environmental Consequences chapter to this issue.

RESPONSES

- A As described in the response to Letter 21B, above, the water resources traversed by the preferred route consist of ephemeral drainages. No streams, riparian habitat, or aquatic resources would be affected. Erosion control practices will be employed during winter construction to protect drainages. However, no additional site-specific mitigation measures are proposed.
- B The preferred alternative will not impact any Corp of Engineers jurisdictional waters.
- C As stated on page 3-16 of the Draft ER, rights-of-way will not be chemically treated unless necessary to comply with requirements of a permitting agency. No such requirement is anticipated. Extensive vegetation management in desert ecosystems is not required due to the low height of common vegetation.

LETTER 29 COMMENTS



United States Department of the Interior

FISH AND WILDLIFE SERVICE
LAGUNA NIGUEL FIELD OFFICE
24000 Avila Road
Laguna Niguel, California 92677

September 17, 1985

RESPONSES

Carl D. Haase, Engineer
Environmental and Governmental Affairs
Department of Water & Power
P.O. Box 111, Room 1121
Los Angeles, California 90052

Re: Mead/McCullough-Victorville/Adelanto Transmission Project
Draft Environmental Report (1-6-85-TA-142)

Dear Mr. Haase:

The Fish and Wildlife Service (FWS) has reviewed the referenced draft Environmental Report (ER). The proposed project consists of the construction of either a direct current transmission line from the Mead Substation near Boulder City, Nevada to Adelanto, California or an alternating current line from the McCullough Substation near Boulder City to Adelanto or McCullough. The draft ER presents a number of route alternatives through the Mojave Desert, including the Project Sponsors' Preferred Route which is 205 miles long, and a route preferred by the Bureau of Land Management (BLM).

- A Evaluations of the environmental impacts of the proposed alternatives and additional information available to our staff have led the FWS to recommend the BLM's Preferred Route, with the substitution of links 41, 38 and 39 for link 42, if the project is to be built. Use of links 41, 38 and 39 would route the power line along Highways 58 and 395. Desert tortoise populations along these roads have been subjected previously to a comparatively high incidence of road mortality and collection. Construction of link 42 and its access road could increase impacts to this area which contains moderate to high density tortoise populations. The BLM Preferred Route would also avoid negative impacts to high quality riparian habitat along the upper Mojave River.

The FWS offers the following specific comments and suggestions:

- B Page 3-16 - Clearing Right-of-Way. Whenever clearing of natural vegetation is necessary, the FWS recommends crushing of plants rather than bulldozing. Crushing enables many species to maintain their root systems and to regenerate vegetative cover more quickly than could be achieved by artificial seeding or planting.

- C Page 4-11. Although not specifically mentioned in the text, the Mojave fishhook cactus does indeed occur in that portion of the utility line corridor within link 20b. Several plants, for example, are found immediately adjacent to the existing Fort Irwin Road between the Mitchell Hills and the northern edge of the Calico Mountains. The cactus is widespread but widely dispersed throughout this area. Potential for adverse effect can be determined only through field surveys.

- A The final preferred route includes Links 41, 38 and 39. See Figure 3-8F.

- B The Project Sponsors agree that crushing of vegetation is preferable to bulldozing and will observe this procedure wherever feasible. As noted on page 3-16 of the Draft ER, this is consistent with the BLM general policy on access road construction.

- C The potential occurrence of the Mojave fishhook cactus within the proposed transmission line corridors was carefully evaluated and is described in the Draft ER. As noted in Tables 4-9 and B-1 of the Technical Report, Volume II, Natural Environment, potential habitat is traversed by Links 20a, 20b, 23, 24a, 25, 26, 27, 32, 33, 34 and 44. Potential habitat along Links 20a and 20b occurs between mileposts 18.5 and 21 and 0 and 11, respectively. As noted in Table 4-16, botanical field surveys to locate this species would be conducted if any of these links are approved and utilized for the proposed project. The preferred route includes Links 20b and 44.

LETTER 29 CONT COMMENTS

- D** Pages 5-8 and 9. Mitigation measure 11b should result in decreased impacts to desert tortoises. However, the FWS believes that impacts to tortoises could be further reduced by modifying mitigation measure 13b. This measure should include marking of tortoise dens in moderate density habitat. The FWS recommends that a statement to the effect that all dens will be avoided during power line construction be added to mitigation measure 13b. Additionally, the FWS recommends that conduits be installed in moderate to high density tortoise habitat where access roads cross washes to facilitate continued unimpeded tortoise movement. The BLM and California Department of Transportation can be consulted regarding conduit design.
- E**

- F** Page 5-8. Mitigation measure 11a is only viable in transient bighorn range, or sheep range far removed from permanent water or installed guzzlers. This is not a viable mitigation measure for that portion of the Project Sponsors' Preferred Alternative which passes through the northern section of the Cady Mountains. The sheep herd here relies very heavily on approximately 2.5 to 3 linear miles of the Mojave River, beginning about 1.5 miles east of the BLM Afton Canyon Campground. Two bighorn guzzlers constructed by the California Department of Fish and Game (CDFG) in the west-central and eastern portion of this range provide a supplemental, but unreliable, supply of water for bighorn. Construction during the summer months would have the highest potential to adversely affect this herd, when concentrated near the canyon and most probably utilizing the utility line area for foraging. The prior CDFG bighorn inventory report for the area, which indicated "seasonal" use for this portion of the Cady's is not correct; sheep are most frequently observed in this portion of the mountain range during the summer months, and have been observed in the area during the winter. Aside from our concerns relating to timing of construction here, the location of the project, in light of the importance to sheep, deserves reconsideration. The BLM alternative, located to the north, does not present this magnitude of threat to bighorn sheep.

RESPONSES

- D** The proposed mitigation measures for the desert tortoise consist of the following:

Measure 11b. - Construction activities in potential desert tortoise habitat with high densities (150 to 250 individuals per square mile) or very high densities (greater than 250 individuals per square mile) would be restricted to the period of October to March when tortoises are underground and hibernating. Hence, construction activities and vehicular movements on the ground surface would not greatly disturb the tortoise and would eliminate the potential for mortality from collisions with vehicles.

Measure 13b. - During construction activities in high and very high density desert tortoise habitats, a qualified biologist would be on site to locate and mark any tortoise dens that could be adversely affected by construction activities, with the intention of avoiding them or otherwise protecting them from adverse effects.

These measures are consistent with the BLM policy for protecting the desert tortoise during construction activities. The Project Sponsors do not believe that marking den openings in moderate density habitat would provide a substantially greater level of protection, primarily because the potential for causing burrow collapse is considered relatively low given the nature and areal extent of the earth-disturbing construction activities.

Impact of transmission line construction activities on different densities of tortoise habitat were considered and it was determined that mitigation measures 11b and 13b are sufficient to protect desert tortoise.

- E** The preferred route has only ephemeral streams and should require no culverts. Roads cross dry washes by cutting down the bank but not by filling or using culverts. The design of desert access roads is such that they would not represent an impediment to tortoise movement on a long-term basis. On a short-term basis, construction activity will be curtailed in tortoise habitat, as described above, so tortoise movement is not a concern.
- F** Link 15, which passes through bighorn sheep habitat near Afton Canyon, is no longer being considered. It will be replaced by Link 16/16A, which is outside any known or potential bighorn sheep habitat.

LETTER 29 CONT COMMENTS

G Page 5-10, Link 20b. A new access road along a portion of this corridor segment, beginning at milepost 2.7 and extending to milepost 7.8, could result in high negative impacts to the desert tortoise. The entire valley, extending from the western edge of the Calico Mountains to milepost 9.0, should be considered as "moderate" to "high" density habitat. Recent information on tortoise distribution and abundance available to the FWS indicates that actual tortoise densities far exceed the estimates obtained during the BLM California Desert Plan Program. The FWS roughly estimates that densities approach or exceed 100 per square mile. Creation of an access road will exacerbate current problems associated with motorized vehicle recreation. Tortoise mortality resulting from road-kills is already a significant impact to populations. The FWS strongly advocates that no road construction take place over this course segment. Impacts to the Mojave ground squirrel and two special interest plants will also be avoided if this suggested mitigation feature is implemented.

H Finally, a mitigation measure addressing construction activities near sites of historical raptor eyries should be inserted into the ER. The FWS recommends a stipulation such as: "Construction activities within a 0.5-mile radius of historical raptor eyries will be curtailed between the dates of February 15th and July 15th to minimize adverse effects on nesting birds." A cursory check of the utility line suggests a high potential for raptor eyries to occur near Stoddard Ridge in links 25 and 33, the northern portion of the Calico Mountains in links 20a, 20b, and 44, and through the Afton Canyon area in links 15 through 18. A pair of prairie falcons observed by FWS biologists near link 11 may use Afton Canyon for nesting. The Stoddard and Afton raptor locations should be added to Figure 4-3 of the Map Volume.

The FWS appreciates the opportunity to comment on the draft ER and look forward to reviewing the final report. Please send a copy of all further information regarding this project in the State of Nevada to the following address:

U.S. Fish and Wildlife Service
4600 Kletzke Lane, Suite C
Reno, NV 89502

If you have any questions, please call Ray Bransfield at (714) 643-4270.

Sincerely yours,

Wayne L. Hays

for Nancy M. Kaufman
Project Leader

RESPONSES

G Based upon previous BLM studies, moderate to high density desert tortoise populations along Link 20b only occurred between mileposts 4.0 and 8.5, and 11.0 and 13.0 (shown in Table 4.7 and B-1 of the Technical Report, Volume II, Natural Environment). Based on the data presented by USFWS, moderate to high density habitat is now estimated to occur from milepost 0.0 to 9.0. Following the impact assessment and mitigation procedures described in Section 5.0 of the Draft ER, any construction activity along these portions of Link 20b would be restricted to the period October to March, when tortoise are inactive, and all dens on site would be marked and protected during construction activities. Preconstruction surveys would also be conducted to identify and avoid any special interest plants along this portion of the route.

H Locations of historic raptor nesting were obtained from data at the BLM Desert Conservation Office at Riverside. In addition, potential raptor nesting habitat was mapped based on field surveys along the corridors. None of the proposed links are within 1.0 mile of any historic nesting location. The proximity of alternative corridors to known or potential nesting habitat (i.e., cliffs, high peaks, remote mountainous areas) for golden eagles, prairie falcons, and other raptors is summarized in Table 4-10 of the Technical Report, Volume II, Natural Environment. Links 20a, 20b and 44 are within 0.5 to 1.0 mile of high peaks and steep slopes of the Calico and Lane Mountains that may provide raptor nesting locations; however, known nest locations are greater than 1.0 mile from these corridors. Links 25 and 33 are more than 1.0 mile from any potential raptor nesting habitat on Stoddard Ridge and Quartzite Mountain. There are no BLM records of eyries in the Afton Canyon area. Based on these results, the recommended raptor mitigation measure is not necessary.

LETTER 31
COMMENTS



Public Utilities Commission
STATE OF CALIFORNIA

September 18, 1985

ADDRESS ALL COMMUNICATIONS
TO THE COMMISSION
CALIFORNIA STATE BUILDING
SAN FRANCISCO, CA 94133
TELEPHONE: (415) 897-6749

FILE NO.

- Mr. Carl D. Haase
Engineer of Environmental and Governmental Affairs
Los Angeles Department of Water and Power
P.O. Box 111, Room 1121
- Los Angeles, CA 90051

Dear Mr. Haase,

The staff of the California Public Utilities Commission has reviewed your Draft Environmental Report for the Mead/McCullough-Victorville/Adelanto Transmission Line. The comments that follow represent concerns we have regarding the proposed project's impact on the existing systems and proposed projects of the Investor Owned Utilities regulated by this Commission.

- A [1. The need for the project appears, in part, to be to deliver capacity contracted for at the Palo Verde switchyard. If so, then the DER should address what actions must be taken by other parties (i.e., the Mead-Phoenix line by WAPA) in order for the project objectives to be fully met. The environmental documents for those projects should also be referenced.

The discussion of alternatives does not adequately address transmission projects by other utilities, especially Southern California Edison. The non-federal project participants in this line are subscribed for over 450 MW of SCE's Devers-Palo Verde #2 line, as well as other projects designed to avail the participants to the economy energy market. In light of that, the EIR should address the following:

- B [- If the SCE line is permitted and constructed, how will that affect the need for this project?

RESPONSES

- A Transmission of Palo Verde Nuclear Generating Station capacity is one of several capabilities provided by this Project, as discussed in Section 1.2.1 of the Draft ER (refer to Section 1.2.6 for discussion of Project relationship to Mead-Phoenix line and reference to environmental documents). Since this Project is a DC line interconnecting to the Mead-Phoenix Project at the Mead Converter Station, these two projects are interrelated; however, they are independent from each other in that the Mead-Phoenix Project can still be constructed in the event Mead/McCullough-Victorville/Adelanto is not. The Mead-Phoenix Project Environmental Impact Statement was expected to be released in February 1986.

- B The Mead/McCullough-Victorville/Adelanto Project has some participants who are not a part of the Devers-Palo Verde #2 line. Additionally, this project provides capabilities beyond that of Devers-Palo Verde #2, including access to both developed and planned generation and economy energy purchases in the Inland Southwest. Sources such as the Springerville Generating Station, Palo Verde Nuclear Generating Station, Coronado Generating Station, San Juan Generating Station, and others are expected to have surplus seasonal and economy energy over the next several years that can only be accessed through a reliable transmission network. Other projects also presently being discussed, which can only be considered with an adequate transmission network to the southern California area, are the Spring Canyon Pump Storage Project and the Inland Intertie Project. The Project also provides opportunities for the sale or exchange of off-peak capacity, as discussed in Section 1.2.3 of the Draft ER.

LETTER 31 CONT COMMENTS

C [- What reasons exist, if any, to show that LADWP must import power through the proposed corridor and substations? How does the proposed project compare with deliveries of imported economy energy over the existing interconnected SCE/LADWP system?

D [- The DER should discuss all of the known projects that could meet all or part of the project participants' objectives, including the California-Oregon Transmission Project, SCE's DC Upgrade, Devers-Palo Verde #2, and this project. Do these projects cumulatively represent an overbuilding, or are they all needed?

E [- If this project is constructed, will the participants still need to participate in the Devers-Palo Verde #2 line? If so, how much?

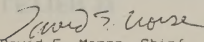
F [- How does this line compare economically with the Devers-Palo Verde #2 line? Include in that analysis the estimated costs of a Mead to Phoenix line, which would be required before the proposed project could provide the same service as the Devers-Palo Verde line. If possible, the ultimate effect on LADWP ratepayers of the proposed project versus alternative projects should also be shown.

G [3. The DER should discuss the effect of the proposed project on the reliability of the interconnected network. If possible, any differences between the AC and DC versions should be pointed out and quantified.

H [4. The DER should discuss the effects of the AC and DC versions on loop flow. It should also discuss subsynchronous resonance, and the degree to which the AC and DC versions are either limited by it, or help mitigate its effects.

We appreciate the opportunity to review this report, and will be pleased to answer any questions you may have regarding any of our comments.

Sincerely,


David E. Morse, Chief
Energy Resources Branch

RESPONSES

C Historically, the existing eastern portion of the SCE/LADWP transmission system has been fully loaded on numerous occasions, and without expansion these occurrences would become more frequent. To meet future load growth as identified in the participants' resource plans, reduce oil and gas generation in the Los Angeles Basin, and at the same time ensure system reliability, it is prudent to add increased transmission capacity now. Having adequate transmission capability in place assures access to generation sources when they become available.

D The California-Oregon Transmission Project and the DC Upgrade provide access to the generating resources of the Pacific Northwest and, hence, would not perform the same function as this Project. Historically, the availability of Pacific Northwest economy energy and Inland Southwest economy energy have not coincided and, therefore, are not alternatives. With regard to the SCE Devers-Palo Verde #2 line, see other responses provided here.

E The SCE Devers-Palo Verde #2 line offers certain (but not all) of the participants capacity on a totally independent transmission corridor. This transmission capability provides needed system reliability to these participants through a separate corridor and enhances the transfer capability of the overall system. Participation in the Devers-Palo Verde #2 line by the Mead/McCullough-Victorville/Adelanto Transmission participants will be committed at a future date.

F The two projects do not provide the same service and, as such, the projects are not directly comparable. Each project has been evaluated on its own merit and both are of benefit to participant ratepayers.

G On the basis of power flow and stability studies which have been performed, the proposed Project can be integrated into the Western Systems Coordinating Council's interconnected system with no adverse impact on the neighboring systems. It was found that both the AC and DC alternatives were equivalent in terms of transient and dynamic performance and that each alternative provided improved system performance over what would exist in the pre-project system.

H The proposed DC line will not add to existing loop flow since the controller power setting equals the actual power flow. If an AC alternative were proposed, loop flow would be a concern; however, the studies indicate that virtually all of the scheduled power would flow over the "transmission path." It is anticipated that subsynchronous resonance will not be a major problem and that the Project will not be limited by it.

LETTER 32 COMMENTS



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 831ST COMBAT SUPPORT GROUP (TAC)
GEORGE AIR FORCE BASE CA 92394-5000

NOV 12 1985

Mr. Carl D. Haase
Engineer of Environmental and Governmental Affairs Section
Los Angeles Department of Water and Power
P.O. Box 111, Room 1121
Los Angeles, CA 90051

RE: Mead/McCullough-Victorville/Adelanto Transmission Project
Coyote Lake Concerns

Dear Mr. Haase;

This letter is in response to the 29 Oct 1985 meeting held at George AFB between representatives of the Los Angeles Department of Water and Power (LADWP), Bureau of Land Management (BLM), and George Air Force Base (GAFB).

A The above referenced meeting and the meeting of 1 Oct 1985 between GAFB and LADWP, have given George AFB a better understanding of Link 44, and its effect on our low level route VR1217. It is now our position that Link 44 is acceptable if, first, towers of less than 100 feet are utilized between mile post 0 to 5.5, and second, minimum effective tower height not to exceed 100 feet above ground level, by use of reduced tower height and/or terrain masking be utilized between mile post 6.5 to 13. B To insure the 100 foot criteria is achieved, George requests to view the preliminary profile drawings as soon as the LADWP has completed them. An additional requirement C is that the power line, both towers and conductors, have a reflective finish. Should D the Coyote Lake area evolve into a utility corridor, it must be understood that Link 44 would constitute the northern most line of the series.

E Now that LADWP has decided this project will utilize DC technology, two additional points need to be raised. First, if the Coyote Lake area is used for the grounding system, George AFB will expect to be given the opportunity to review the grounding system and line to insure VR1217 is not impacted. Second, in that the DC convertor station will probably be expanded, as part of this project, LADWP should continue to recognize that the Adelanto site lies approximately five (5) miles off the main departure runway at GAFB (runway 21). While the area is not within a designated Accident Potential Zone (APZ) as defined in the Air Installation Compatible Use Zone (AICUZ) Study, it should be noted that approximately 25% of all aircraft accidents within a 10 nautical mile radius occur outside these APZs. Obviously, areas which regularly experience overflight have a potential of being subjected to an aircraft accident.

G We understand your agency will allow us to review a draft of the final environmental impact statement with respect to the existence and preservation of aircraft operations in the Coyote Lake area. This will insure that future analysis of routing alternatives in the Coyote Lake area will have, as baseline data, the agreements reached in locating this Mead-Adelanto intertie.

RESPONSES

- A The Project Sponsors have agreed to this mitigation measure.
- B Plan and profile drawings of the transmission line in Link 44 will be made available to George Air Force Base for review.
- C Towers will not be dulled between mileposts 0.0 and 13.0 of Link 44. Specular conductor will be used.
- D To the extent to which the placement of future transmission lines in the vicinity of Coyote Lake is within the purview of the Project Sponsors and the BLM, it is our intention that the Mead/McCullough-Victorville/Adelanto line would be the most northerly transmission line alignment in the utility corridor.
- E If the Coyote Lake area is used for the ground electrode, George Air Force Base will be given the opportunity to review the system plans for potential impacts to VR 1217.
- F Your comments have been noted. We recognize the potential for transmission facilities to be subjected to aircraft accidents.
- G A copy of the Final ER sections pertaining to aircraft operations in the Coyote Lake area was forwarded to George Air Force Base.

LETTER 32 CONT
COMMENTS

Should you have any questions regarding this matter, please contact the environmental
planning staff at (619) 269-2971.

Ronald D. White
DONALD D. WHITE
Colonel, USAF
Commander

UNCLASSIFIED CONFIDENTIAL SECRETARY OF DEFENSE
THIS DOCUMENT CONTAINS NEITHER RECOMMENDATIONS NOR
CONCLUSIONS OF THE SECRETARY OF DEFENSE

Col. D. White

Director of Environmental

Planning

Headquarters, U.S. Air Force

Washington, D.C. 20330

1025-0002

Environmental Planning Staff

1025-0002

1025-0002

1025-0002

LETTER 33
COMMENTS

Department of Water and Power



the City of Los Angeles

TOM BRADLEY
Mayor

Commission
JACK W. LEENEY, President
RICK J. CURIO, Vice President
ANGELO M. FICHERA, Vice President
CAROL WHITFIELD
WILLIAM S. ZIEGLER
H. DUDLEY K. DAVISON, Secretary

PAUL H. FANE, General Manager and Chief Engineer
NORMAN F. NICHOLS, Assistant General Manager - Power
DANIEL J. GEORGINOS, Assistant General Manager - Water
NORMAN J. POWERS, Chief Financial Officer

RESPONSES

September 18, 1985

Mr. Gerald E. Hillier
District Manager
United States Department
of the Interior
Bureau of Land Management
California Desert District
1695 Spruce Street
Riverside, California 92507

Dear Mr. Hillier:

Mead/McCullough-Victorville/Adelanto
Transmission Project (Project)
Use of the Interstate 15 Corridor

This is to support the Los Angeles Department of Water and Power's (DWP) selection of the California Desert Plan's Corridor BB (Interstate 15 (I-15) Corridor) between Stateline and the Mojave Valley, California (northeast of Barstow) and the use of modified contingent Corridors P and Q as the Project's preferred route.

One of the primary issues with regard to the selection of a transmission route for the Project transmission line is the decision whether to follow the existing Boulder Corridor, now containing four high-capacity transmission lines, or the I-15 Corridor now containing one low-capacity transmission line. It is the position of DWP that the I-15 Corridor should be utilized to enhance the reliability of DWP's and Western Systems Coordinating Council's (WSCC) bulk transmission system while providing the low-cost uninterrupted electric power that customers have become increasingly dependent upon. (See Enclosure 1 entitled "Los Angeles DWP Policy Statement on Corridor Utilization.")

The loss of a transmission corridor is a possibility which must be considered when assessing the reliability of a transmission system. Transmission lines adjacent to each other on a common right-of-way are exposed to potential simultaneous forced outages from a number of sources including lightning, floods, earthquakes, vandalism, sabotage, aircraft, and the increased risks associated with low-level military training routes, among others.

Your comments have been noted. The final preferred route does not use the Boulder Corridor, mainly for the reasons cited in your letter.

LETTER 33 CONT
COMMENTS

Mr. Gerald E. Hillier

- 2 -

September 18, 1985

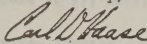
As existing transmission is loaded to higher levels for sustained periods of time, system disturbances in the transmission network can no longer be responded to by relying on a "cushion" of reserve capability to avert blackouts. Reserve capability has steadily given way to a complex network of monitoring signaling, relaying and switching logic systems referred to as "remedial action measures", and to a series of conditional operating restrictions that dispatchers must factor into their decision making. These remedial action schemes and operating restrictions, however, cannot substitute for additional reliable transmission facilities.

The Boulder Corridor is already occupied by two 500-kV ac lines, one ± 500 -kV dc line, and one 287-kV ac line with a combined capacity of 4000 MW. The addition of the Project's line within this corridor would increase the corridor's capacity to more than the peak electrical load of the City of Los Angeles. The loss of these five transmission lines in a Boulder Corridor outage would result in cascading instability in the interconnected network resulting in protracted outages of several thousand megawatts in Southern California. (See Enclosure 2, Appendix D, from the Project's Draft Environmental Report on Transmission Line Reliability and Need for Corridor Separation.)

Clearly, any additional separation of the existing Boulder Corridor from future transmission lines will enhance the reliability of the WSCC transmission system. DWP feels that the increased risks incurred by continuing to construct new transmission lines in the already crowded Boulder Corridor outweigh the negative impact of a new transmission corridor.

If you have any questions or need additional information, please contact me at (213) 481-3250 or Mr. James P. Mieding at (213) 481-8637.

Sincerely,



CARL D. HAASE

Engineer of Environmental and
Governmental Affairs

KMA:gp

Enclosures

cc: Mr. William H. Collins
United States Department
of the Interior
Bureau of Land Management
California Desert District

Mr. John H. Robinson
Dames & Moore
222 East Anapamu Street
Santa Barbara, California 93101-2074

Mr. James P. Mieding

LETTER 33 CONT COMMENTS

Enclosure 1

LOS ANGELES DEPARTMENT OF WATER AND POWER (DWP) POLICY STATEMENT ON CORRIDOR UTILIZATION

It is DWP's policy that, where at all possible, no more than two 500-kV lines will be built on a single transmission corridor unless a minimum separation of at least 2000 feet can be maintained between additional and existing lines. This policy is currently an industry-wide standard deemed necessary to enhance the reliability of the WSCC system and reduce the risk of cascading outages of customer loads.

Typically, 500-kV transmission lines are loaded to a transfer level of about 1000 MW. This means a corridor outage of three or more 500-kV lines would result in the loss of 3000 MW or more of power transfer. The loss of this much transmission could result in system-wide cascading power outages resulting in protracted area blackouts in the affected states.

The minimum separation of 2000 feet is based on the worst-case scenario of an aircraft dragging a full span length of ground wire across parallel transmission lines. DWP currently maintains an average span length of 1450 feet on 500-kV ac transmission lines, well below the minimum separation requirement of 2000 feet. Other more probable scenarios, such as sympathetic flashover and a tower collapsing into an adjacent circuit, are also covered by this minimum separation requirement.

DWP's new Victorville to Rinaldi 500-kV transmission line to be constructed in 1986 adheres to this minimum separation requirement as it alternately parallels the existing Adelanto to Rinaldi and Adelanto to Toluca 500-kV lines. To meet this policy, DWP's proposed Mead/McCullough-Victorville/Adelanto Transmission Project must be routed in the I-15 Corridor. Due to existing Wilderness Study Areas and Fort Irwin boundaries, the 2000-foot minimum separation cannot be maintained for any additional transmission lines in the Boulder Corridor.

TABLE 1-3
MEAD/McCULLOUGH-VICTORVILLE/ADELANTO TRANSMISSION PROJECT
Summary of Public Hearing Comments and
Agency Responses on Draft Environmental Report

Comment Number	From	Issue/Concern	Response
H1	Southwest Gas Corporation (Henry Gibbs)	A. Concerns regarding potential Project impacts on their gas transmission and distribution system in Nevada. Potential impacts could include corrosion and safety hazards. Felt that appropriate mitigation can be determined in coordination with the Project Sponsors.	The primary concern with the operation of an HVDC transmission line in proximity to pipelines arises from ground currents near the ground electrodes. The local and remote effects of ground electrodes and mitigation of such effects was addressed on pages 5-44 and 5-45 of the Draft ER. Southwest Gas Corporation, and other utilities having facilities which will be crossed by the project transmission line, will be contacted prior to construction, and mitigation of electrical effects will be addressed on a case-by-case basis at Project expense.
H2	Lois Clark	A. New corridors through the desert are not necessary, when an existing corridor could be used. Recommended use of Boulder Corridor. B. Concerns regarding interference with emergency vehicle radios and television.	See response to comment 17F and Letter 33 in Table 1-2. The potential for FM radio emergency service and television interference resulting from the Project is described in the Draft ER pages 5-39 to 5-42. The impacts of EMI, shielding, reradiation, and multipath on radio and TV systems caused by EHV transmission lines can, in most cases, be reduced or eliminated by changing either the receiver or transmitter antenna pattern or location. These are among the mitigation measures recommended below should interference occur. The Project Sponsors understand that the emergency FM radio system provides an important service throughout the Baker Valley area. Reception is subject to shielding within a limited area directly under and adjacent to the transmission line, but degradation of the emergency communications system is not otherwise anticipated. Should such degradation occur, however, mitigation measures will be implemented at Project expense to restore this vital system to its original condition. Possible mitigation measures include the following:

Table 1-3 (continued)
Summary of Public Hearing Comments
and Agency Responses

Comment Number	From	Issue/Concern	Response
H2 cont.			<ul style="list-style-type: none"> - Relocate the transmitter base station and or antenna - Increase transmitter power <p>The Project Sponsors also recognize that television reception in Baker is poor; however, since television provides an important source of entertainment and information to the community, care must be taken to avoid further degradation of television reception. A discussion of television interference is included in the Draft ER on pages 5-39 and 40. If degradation of television reception is caused by the transmission line, mitigation measures will be implemented. Interference will be investigated on a case by case basis to determine cost effective and typical mitigations which may include the following:</p> <ul style="list-style-type: none"> - Increase output power of the transmitter (currently operating at one watt but licensed for ten watts of power) - Relocate or improve receiving antennas - Provide a satellite reception system <p>The costs are essentially the same.</p> <p>Peak load demand could not be rerouted over the existing system in such an event, since sufficient capacity does not exist.</p>
		C. Requests clarification of costs of using the Boulder versus the I-15 Corridor.	
		D. Requests clarification of electric service delivery to Los Angeles in the event of a Boulder Corridor outage.	

Table 1-3 (continued)
Summary of Public Hearing Comments
and Agency Responses

Comment Number	From	Issue/Concern	Response
H3	George Brannon	<p>A. Concerns for providing fire protection for the transmission line near Baker.</p> <p>B. Concerns regarding impacts of the Project on the Baker Airport, particularly potential to limit growth of the airport.</p> <p>C. Concerns for aesthetic impacts to scenic desert, and effects on tourism.</p> <p>D. Favors use of Boulder Corridor.</p>	<p>Forest and brush fires under a transmission line constitute a threat to the line because intense heat may damage conductors and the byproducts of heat and smoke may lead to flashovers which result in interruption of power flow. However, the transmission line is constructed of metallic non-combustible materials and will not require an increase in the level of available fire protection.</p> <p>Based on proposed mitigation (lower maximum tower height), FAA airport clearance zone criteria are maintained, thus no operational limitations to use the Baker Airport will be created by the proposed transmission line.</p> <p>It is recognized that transmission lines create visual impacts. Potential mitigation measures include careful route siting and tower placement, taking advantage of topographic screening wherever possible, alternative tower finishes, and use of non-specular conductor. The Project Sponsors are committed to reducing significant visual impacts of the Project to the extent possible.</p> <p>See response to Comment 17F and Letter 33 in Table 1-2. In addition to reliability concerns, environmental, engineering, and economic factors were considered in the selection of the preferred route, as were public comments.</p>
H4	Richard Staal	Concerns regarding aesthetic and land use impacts near Harvard and the surrounding desert. Requested clarification of whether the route is on the north or south side of I-15.	See response to Comment H3-C above. The preferred route would be on the north side of I-15, and has been located to the extent possible to minimize land use and visual impacts to developed land, including agricultural resources.

Table 1-3 (continued)
Summary of Public Hearing Comments
and Agency Responses

Comment Number	From	Issue/Concern	Response
H5	Donald Dabney	<p>A. Requested clarification of when the line would be staked and surveyed.</p> <p>B. Requested clarification of location of route south of Baker (Link 10).</p> <p>C. Questioned whether additional transmission lines could be constructed along a parallel alignment in the future.</p>	<p>This will probably occur in late fall or early winter 1986.</p> <p>The route is located outside of the Baker Community Services District and Township. Link 10 is not included in the preferred route.</p> <p>The intent of the California Desert Conservation Area Plan of 1980 was to require new major utility projects, such as transmission lines, pipelines etc., to use identified utility corridors rather than apply for rights-of-way running in all directions across the desert. Therefore, BLM will encourage the routing of future utilities into existing corridors and along existing lines, taking into account other factors such as safety and reliability.</p>
H6	George Air Force Base (Col. Donald White)	Concerns regarding Project impacts to flight operations.	See Letter 32 in Table 1-2 and Appendix B of this document.
H7	City of Victorville (John Hnatek)	<p>City currently has more than its fair share of transmission lines, which have created developmental problems. Concerns for relationship of lines to other transportation and service facilities and for health and safety effects.</p> <p>Prefer a route that does not traverse the city.</p> <p>Conditional Use Permit would be required. Draft ER did not adequately address problems of transmission lines relative to urban development.</p>	Your comments have been noted. The preferred route is no longer located through or in the vicinity of Victorville. See Figure 3-8F in Chapter 2 of this document.
H8	Jim Alexander	Draft ER cultural resources studies were well done. Supports northern route into Adelanto. Concern for sabotage of transmission lines in a single corridor.	Your comments have been noted. Reliability was a major factor in selecting the preferred route.
H9	Desert Task Force, San Geronio Chapter, Sierra Club (Scott Simons)	<p>Do not consider the existing utility corridor to be fully developed. If lines were sufficiently separated within the two-mile-wide corridor, there would be no chance of damage from lightning, flood, wind, aircraft, vandalism and sabotage. Support use of Boulder Corridor. Oppose I-15 Corridor.</p> <p>Concerned about impacts to East Mojave National Scenic Area.</p>	Your comments have been noted. Please refer to response to comment 17F and to Letter 33 in Table 1-2. The preferred route now largely avoids the East Mojave National Scenic Area. WSA boundary constraints along the Boulder Corridor limit the ability to separate the proposed line from the four existing major transmission lines.

Table 1-3 (continued)
Summary of Public Hearing Comments
and Agency Responses

Comment Number	From	Issue/Concern	Response
H10	Chemehuevi Indian Tribe (Edward D. Smith)	Requested that all sites of concern to Native Americans be recorded. All burial sites must be avoided. Requested copies of all documents that identify Native American cultural resources. Concern for increased access and vandalism.	A complete survey of Native American cultural resources along the preferred route will be conducted prior to construction, and appropriate mitigation will be developed in consultation with the tribe having jurisdiction and with the California Native American Heritage Commission. Studies to-date have not discovered any resources of contemporary Native American concern, although the preferred route would traverse areas of high archaeological sensitivity. A copy of the cultural resources study has been provided.
H11	Bill Eason	Inquired about a future transmission line project unrelated to this Project.	Clarification was provided at the hearing.

CHAPTER 2 - CHANGES AND ERRATA

CHANGES

Preferred Route

In response to comments received on the Draft EIS, as well as additional review of environmental and scientific reliability, the Project Sponsor and FEA have revised their preferred route as presented in the Draft EIS. The first preferred route, which runs north-south, again appears to be similar to Alternative C, identified in the Project Sponsor's Preferred Route in the Draft EIS, with the following exceptions: (1) the first preferred route continues on the north side of L-15 in the vicinity of Chain; (2) Links 18 and 19 have been included with Link 16, and (3) the route crosses an existing SLR contingency utility corridor through Kramer Junction rather than the more technically alternative crossing proposed.

The first preferred route is identified in this document as Alternative D and is depicted in Figure 2-10. The differences between the first preferred route and Alternative D relate to page 2-3 and Table 2-1 of the Draft EIS are as follows:

ALTERNATIVE D Segments (Link)	ALTERNATIVE D First Preferred Route Segments (Link)
A-3 (0, 1, 2)	A-3 (0, 1, 2)
B-21 (5, 15, 26, 30)	B-21 (5, 15, 26, 30)
B-18 (10, 12, 13, 14, 15, 18)	B-12 (9, 13, 14, 15, 18)
C-4 (1, 3, 14, 44, 28)	C-4 (1, 3, 14, 44, 28)
D-3 (62, 60)	D-3 (1, 13, 21, 60)
D-7 (100, 10, 11)	D-7 (100, 10, 11)

A summary of new proposed segments and links associated with the first preferred route appears on page 2-3 and Table 2-1 of the Summary of this document.

Link 16a

The first preferred route includes Link 16 located between the Chinese Mountain and Cape Mountain Pass (Figure 2-8B). A small modification has been made to Link 16 in order to provide a better crossing of I-15 in the rugged terrain. The modification is depicted as Link 16a on the following discussion, and is illustrated in Figure 2-1. Link 16a is 1.4 miles long; the portion of Link 16 that is modified was 1.5 miles long.

CHAPTER 2 CHANGES AND ERRATA

An environmental assessment has been conducted on the first preferred route as that conducted for all other alternatives presented in the Draft EIS. A description of affected resources and impacts is given below, comparing Link 16a with the portion of Link 16 which it replaces (see Figure 2-1). Potential impact levels for the entire initial Link 16 (Draft EIS) and the entire

CHAPTER 2 - CHANGES AND ERRATA

CHANGES

Preferred Route

In response to comments received on the Draft ER, as well as additional review of environmental and system reliability, the Project Sponsors and BLM have revised their preferred routes as presented in the Draft ER. The final preferred route, which both entities agree upon, is similar to Alternative D, identified as the Project Sponsors' Preferred Route in the Draft ER, with the following exceptions: (1) the final preferred route continues on the north side of I-15 in the vicinity of Baker, (2) Links 14 and 15 have been replaced with Link 16, and (3) the route uses an existing BLM contingency utility corridor through Kramer Junction rather than the more southerly alternative previously proposed.

The final preferred route is identified in this document as Alternative DF and is depicted on Figure 3-8F. The differences between the final preferred route and Alternative D (refer to page 3-30 and Table 3-7 of the Draft ER) are as follows:

ALTERNATIVE D Segments (Links)	ALTERNATIVE DF (Final Preferred Route) Segments (Links)
A-3 (0,1,2)	A-3 (0,1,2)
B-21 (5a,45,5c,8)	B-21 (5a,45,5c,8)
B-16 (10,12,13,14,15,18)	B-12 (9,13,16/16a,18)
C-4 (19,21a,44,20b)	C-4 (19,21a,44,20b)
D-3 (42,40a)	D-5 (41,38,39,40a)
D-7 (40b,30,31)	D-7 (40b,30,31)

A summary of environmental resources and impacts associated with the final preferred route is provided in Table 3-9F in the Summary of this document.

Link 16a

The final preferred route includes Link 16 located between the Cronese Mountains and Cave Mountain (see Figure 3-8F). A small modification has been made in Link 16 in order to provide a better crossing of I-15 in less rugged terrain. The modification is denoted as Link 16a in the following discussion, and is displayed on Figure 2-1. Link 16a is 1.4 miles long; the portion of Link 16 which it replaces was 1.5 miles long.

An environmental assessment has been conducted for Link 16a in the same manner as that conducted for all other alternatives presented in the Draft ER. A description of affected resources and impacts is given below, comparing Link 16a with the portion of Link 16 which it replaces (see Figure 2-1). Residual impact levels for the entire initial Link 16 (Draft ER) and the entire

modified Link 16/16a are summarized in Table 2-1. Link 16 is 8.6 miles long, and Link 16/16a is 8.5 miles long.

As discussed below, the only resource for which differences between the two links occur is land use. Link 16a crosses more public land and less private land than the replaced portion of Link 16, and passes in the vicinity of an AT&T facility with its associated underground coaxial cable, which it parallels. The original portion of Link 16 parallels an existing 138kV transmission line, while Link 16a does not. The only high impact identified in Link 16a is for highway views. The original portion of Link 16 also resulted in high impacts to highway views. Moderate impacts were assigned for recreation views, scenic quality, and paleontological resources, as were moderate impacts assigned to Link 16 for these resources.

Earth Resources

The entire length of Link 16a is within granular soils of alluvial fans, as is Link 16. Therefore, no difference in impacts would result for soil erosion potential or potential for inundation from a 100-year flood, which are both low.

Biological Resources

Vegetation along Link 16a consists of undisturbed creosote bush scrub with several small sandy washes. No legally protected plants or wildlife species are known or expected to occur at or near this route. Poor quality desert tortoise habitat is traversed with potential densities of 0 to 50 individuals per square mile. No difference in the nature or level of impacts is expected from those assigned to Link 16.

Land Use

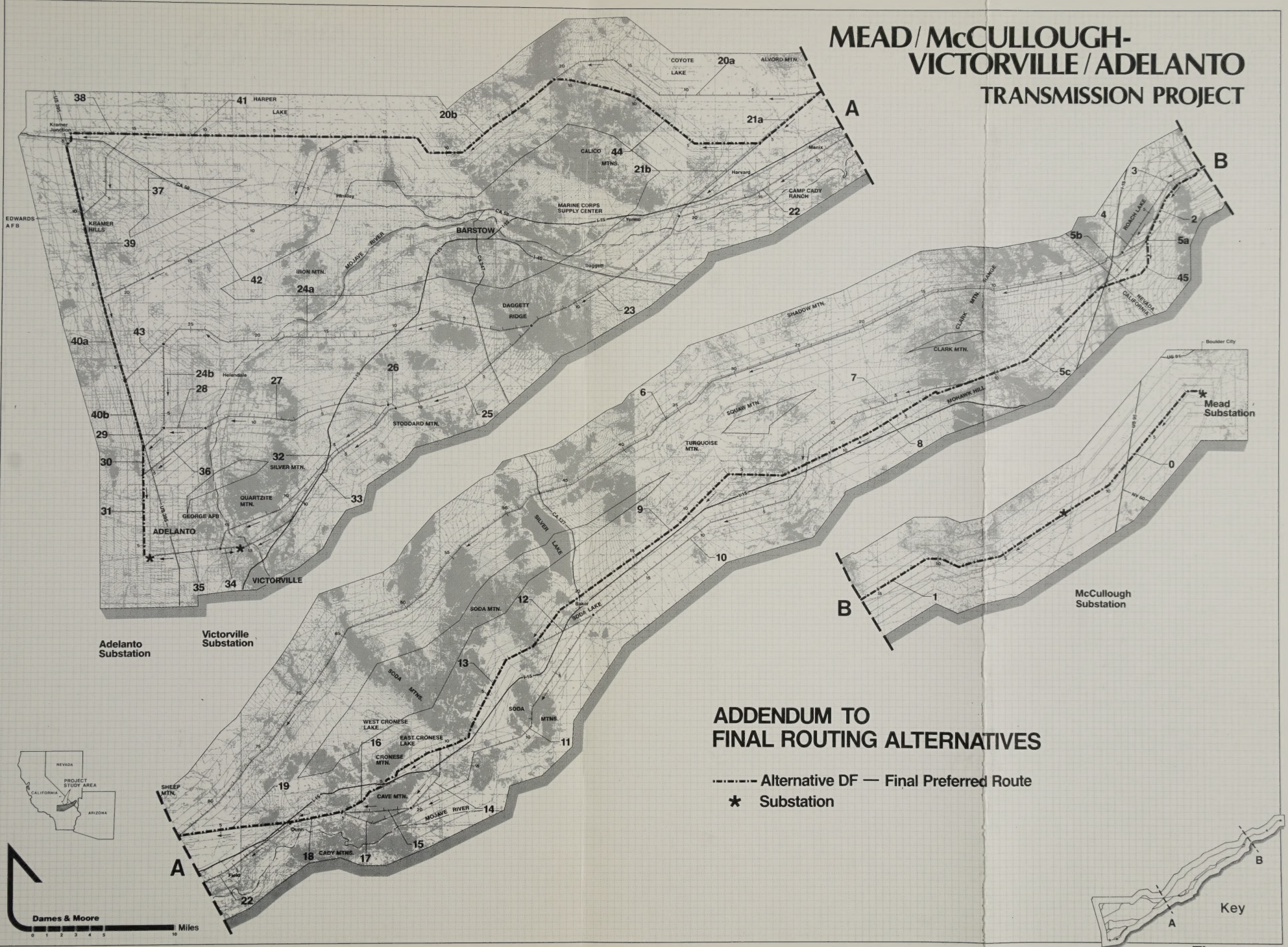
Link 16a crosses both public (BLM) land and private (proposed land transfer or sale) land, as does Link 16. The proposed land exchange involves the Southern Pacific Land Company and BLM.

Link 16a crosses an AT&T regenerator hut and parallels an AT&T coaxial cable. AT&T and the Project Sponsors will monitor the facilities after Project energization to identify any impacts that may occur.

Link 16a is within a designated utility corridor (BLM) and crosses the land use category of resource conservation (identified in the San Bernardino County Consolidated General Plan and Implementation System), as does Link 16. No significant initial or residual impacts were identified.

Recreational uses in Link 16a include the Barstow-Las Vegas race route, a San Bernardino County scenic route (I-15), and a California state highway eligible

**MEAD/McCULLOUGH-
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TRANSMISSION PROJECT**

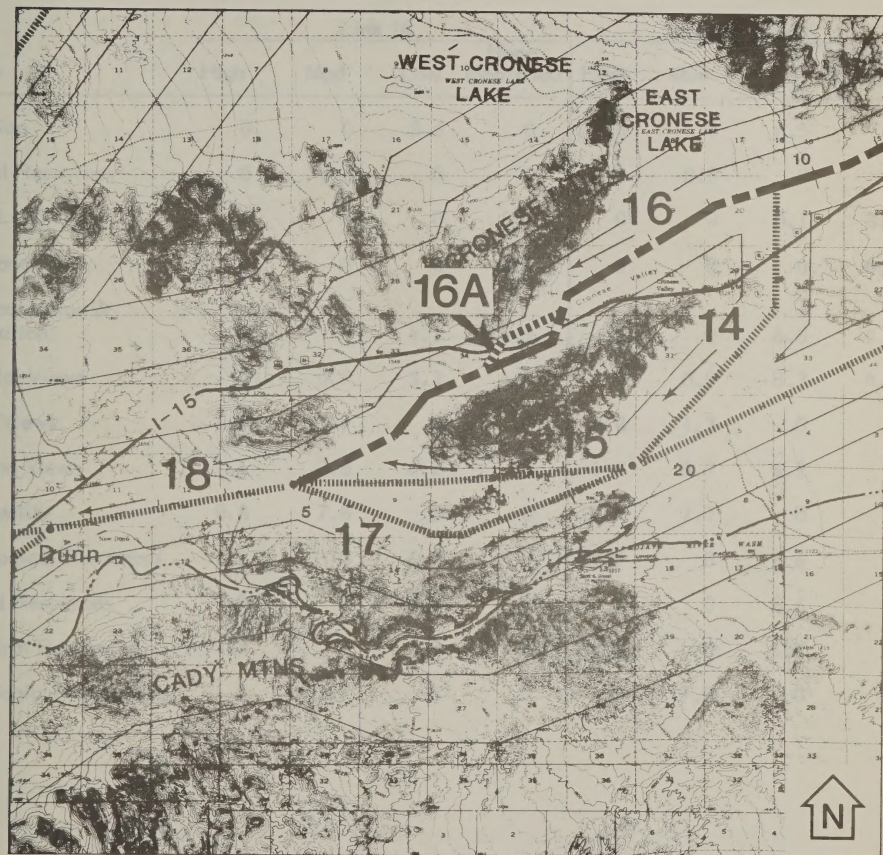


**ADDENDUM TO
FINAL ROUTING ALTERNATIVES**

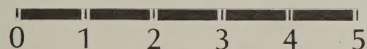
----- Alternative DF — Final Preferred Route
★ Substation

Figure 3-8F

MEAD/McCULLOUGH- VICTORVILLE/ADELANTO TRANSMISSION PROJECT



Miles



REVISED ROUTE-LINK 16

- Link 16-Draft ER
- Link 16 Revision-Final ER

Figure 2-1

TABLE 2-I
COMPARISON OF RESIDUAL IMPACTS
LINK 16 AND LINK 16/16A

Resource	Link 16				Link 16/16a			
	High	Mod	Low	None Identified	High	Mod	Low	None Identified
Soil Erosion	0	0	8.6	0	0	0	8.5	0
Biological Resources	0	8.6	0	0	0	8.5	0	0
Existing Land Use	0	0	0	8.6	0	0	0.1	8.4
Future Land Use	0	0	0	8.6	0	0	0	8.5
Parks, Recreation & Preservation	0	0	4.1	4.5	0	0	4.0	4.5
Residential Views	0	0.9	3.3	4.4	0	0.9	3.3	4.3
Highway Views	6.9	1.7	0	0	6.8	1.7	0	0
Recreation Views	1.6	0.8	6.2	0	1.6	0.7	6.2	0
Scenic Quality	0.8	7.8	0	0	0.8	7.7	0	0
Archaeological Resources	1.9	0	6.7	0	1.9	0	6.6	0
Historical Resources	0	0	8.6	0	0	0	8.6	0
Ethnological Resources	1.9	0	6.7	0	1.9	0	6.6	0
Paleontological Resources	1.5	7.1	0	0	1.5	7.0	0	0

for scenic designation (also I-15). These same corridors were crossed by Link 16. No significant initial or residual impacts were identified.

Visual Resources

There are no residential viewers in the vicinity of either Link 16a or Link 16, and therefore no impacts would occur. Highway impacts to I-15 are considered high for both alternatives, since either would parallel and cross the road in foreground view. Recreation views include the Barstow-Las Vegas race route, where moderate impacts are assigned for Link 16a as well as Link 16. Scenic quality impacts would be moderate for both links. An alignment in Link 16a would be closer to the base of the mountain, providing better backdrop and visual absorption potential than Link 16. However, structure contrast would be slightly higher since Link 16a does not parallel an existing transmission line.

Cultural Resources

The archaeological sensitivity of Link 16a is minimal, since the area contains known or predicted low site density. The archaeological impacts for both Link 16 and Link 16a are low, given the anticipated upgrade in existing access rather than new access requirements.

Link 16a passes through an area with no identified historical sensitivity. It is an area of low historic site value. Therefore, historical sensitivity and impact levels are the same for Link 16 and Link 16a.

While the Cronese Valley Basin and Mountain areas identified by Bean and Vane (1979) are areas of ethnographic concern, there are no sites along or in the vicinity of either Link 16a or Link 16 that are expected to be affected by the Project. Low impacts have been assigned to both links.

Both Link 16a and Link 16 occur within a moderate sensitivity formation with respect to paleontological resources. There are no known sites located along either route.

ERRATA

Chapter 1

Page I-1, Footnote 1: "See Section 1.2.5 for a discussion of the Mead-Phoenix 500kV Transmission Line Project" should be "See Section 1.2.6..."

Page I-2, first paragraph, third line: "(to 1780 kcmil)" should be "(twin 1780 kcmil)".

Chapter 3

Page 3-12, under 3.6 PROPOSED ACTION, second sentence: "The proposal includes a 500kV AC or DC transmission line, modifications to existing substations, a converter terminal modification to existing communication facilities, and a ground electrode..." should be "...modifications to existing substations, a converter terminal, modifications to existing and associated communication facilities, and a ground electrode...".

Page 3-21, under Neutral Return, fourth line: "as construction" should be "as constructed".

Page 3-25, second paragraph, eighth line: "The Air Force recommended moving the alignment further south and adjacent to the foothills of the Calico Mountains as mitigation that would be acceptable to their operations. Based on this input, Link 44, a route acceptable to the Air Force, was located in the foothills of the Calico Mountains between the Boulder Corridor and Fort Irwin Road." The use of the word "acceptable" is a mischaracterization of George Air Force Base's position regarding Link 44. The route should have been termed "workable." The Air Force has pointed out that an alignment on Link 44 could affect their low-level flight training route VR1217, and only through application of specific mitigation measures in addition to careful centerline siting, can this link be made "acceptable" to the Air Force. Such mitigation measures are enumerated in George Air Force Base's comments on the Draft ER (32A-G) in Table I-2 in Chapter I of this document.

Page 3-27, last paragraph, first sentence: "Option C-4 is the Project Sponsors' Preferred Route and was identified as a mitigation (to Routing Option C-1) measure to avoid potential impacts to the low-level training flights occurring over Coyote Lake." should be "...and was identified as a workable mitigation...measure to reduce potential impacts...". Reference above discussion and Table I-2.

Page 3-30, second paragraph, second sentence: "Alternative A through Victorville is least preferred by area residents, the City of Victorville, and George Air Force Base." should be "Alternative A through Victorville is least preferred by area residents and the City of Victorville.".

Page 3-31, second paragraph: "Based on the results of the agency/public scoping and workshop meetings held during the environmental studies, Alternative B would be acceptable to the public (area residents in Baker, Victorville, Adelanto, and Silver Lakes), agencies (City of Victorville, George and Edwards Air Force Bases, and CALTRANS), and public interest groups (e.g., supporters of the East Mojave National Scenic Area)." Change "acceptable" to "workable".

Page 3-32, first paragraph (pertaining to Alternative D): "Concern has been expressed by area residents (Baker), special interest groups (supporters of the East Mojave National Scenic Area), and agencies (CALTRANS). No public concern has been expressed for the Kramer Junction portion of this alter-

native." Delete second sentence, and add: "Due to concerns expressed by George Air Force Base regarding low level flight route VR 1217, the maximum tower height on most of Link 44 will be reduced to 100 feet above the surrounding terrain, with non-dulled tower finish and specular conductors. Lockheed Corporation expressed concerns about their Helendale Avionics Facility south of Link 42. Subsequent meetings between Lockheed and DWP have indicated that no effects are anticipated on their facility from this alignment."

Table 3-8, (Comparison of Preliminary Routing Options map volume), under column entitled Routing Option: "B-4 (Links 1,0,12)" should be "B-4 (Links 10,12)".

Table 3-9, (Comparison of Final Routing Options map volume): The use of a dash (-) in a column indicates that the particular resource does not occur along an alternative route. All columns that were left blank should contain a dash.

Chapter 4

Figure 4-7, (Land Use - Linear Features map volume), legend: "Coolwater-Kramer 115kV (SCE)" should be "Coolwater-Kramer 220kV (SCE)".

Chapter 5

Page 5-18, last sentence: "Because property taxes on the transmission line will vary with alternative routes, estimated revenues are summarized below and tabulated in Tables 5-3 and 5-4." Add: "These tables display only the estimated taxes on land (the right-of-way) in order to be consistent between Nevada and California. The Project Sponsors are exempt from taxes on improvements (transmission line and associated facilities) in California, but will pay taxes on improvements in Nevada. Estimated revenue from property taxes and use taxes imposed on the value of construction materials in Nevada are not included in Tables 5-3 and 5-4." The Nevada Office of Community Services pointed out that the presentation of Tables 5-3 and 5-4 was misleading and appeared to be inconsistent with the Socioeconomics discussion in Chapter 4 of the Draft ER. Refer to comments by Nevada Office of Community Services (21D) in Table 1-2 in Chapter 1 of this document.

Table 5-2, Locations of Selectively Committed Mitigation Measures (map volume):

- for Link 44, under column entitled #5 Special Tower Design: add "0.0-13.0b". Under column entitled #6 Dull Tower Finish: "0.0-7.0, 10.6-12.8" should be "13.0-16.2".
- for Link 45, under column entitled #5 Special Tower Design: delete "0.0-14.0".

- add footnote: "b. Mitigation for Link 44 is to reduce tower height to less than 100 feet from mileposts 0.0 to 6.5, and from mileposts 6.5 to 13.0 to use a combination of reduced tower height and topographic screening to keep effective tower height at 100 feet or less above the surrounding terrain."

Chapter 6.0

Page 6-1, under Los Angeles Department of Water and Power, Add:

R.L. Carpenter	Survey
L.A. Lindenbaum	Survey
M.A. Reavis	Research & Special Studies

Appendix G

Appendix G, Agencies, Organizations, and Individuals Receiving a Copy of the Draft ER, has been updated, and is included as Appendix C of this document. This list reflects those who will receive a copy of the Final ER.

APPENDIX A
SUMMARY OF
PALEONTOLOGIC RESOURCES INVESTIGATION

APPENDIX A
PALEONTOLOGICAL SUMMARY
OF RESOURCE INVESTIGATION

December 1961

Engineering Division, Inc. at 100 W. Walnut & Broadway, St. Louis 8, Mo.

APPENDIX A

SUMMARY OF
PALEONTOLOGIC RESOURCE INVESTIGATION

Prepared By

E. Bruce Lander
John M. Alderson

Engineering Science, Inc.

December 1985

Engineering Science, Inc. • 100 W. Walnut • Pasadena, CA 91214

ABSTRACT

A paleontologic resource assessment was conducted to supplement information provided in the Draft Environmental Report for the Mead/McCullough-Victorville/Adelanto Transmission Project in California and Nevada. Nearly 165 fossil localities from at least 10 formations were identified from the study area. At least seven of these formations, all highly important, and many fossil localities occur in the rights-of-way (ROWs). Measures are proposed for mitigating adverse direct and indirect impacts to paleontologic resources that would occur during construction and operation of the project.

This report was prepared by the U.S. Bureau of Land Management (BLM) in cooperation with the California Department of Conservation (CDC) and the Nevada Department of Conservation (NDC). It is a component of the Draft Environmental Report for the Mead/McCullough-Victorville/Adelanto Transmission Project.

Paleontologic resources were identified and evaluated in cooperation with the CDC and NDC. The study area is located in the Mead/McCullough-Victorville/Adelanto Transmission Project area, which is a portion of a larger project extending from the Colorado River to the State of Nevada. The project is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project, which is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project. The project is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project, which is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project.

To protect the resources from adverse effects resulting from construction and operation, the BLM and CDC/NDC have developed a plan of action. This plan includes a number of measures to be taken to protect the resources. The plan is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project, which is a major part of the Mead/McCullough-Victorville/Adelanto Transmission Project.

This report was prepared by Dr. J. Bruce Lister and Mr. J. W. Lister, paleontologists with the California Department of Conservation, and Mr. J. W. Lister, a BLM, division of paleontology. Mr. Lister has a B.S. degree in geology. Both individuals have previously conducted paleontologic resource investigations in southern California, including the Mead/McCullough-Victorville/Adelanto Transmission Project.

SECTION 1.0

INTRODUCTION

Fossils are scientifically important because of their utility in documenting the evolution of particular groups of organisms, interpreting past environments, and in the refined dating of the rocks in which they occur and of geologic events. In recognizing the importance of fossils and their nonrenewable nature, various government agencies including the U.S. Bureau of Land Management (BLM) often require assessments of paleontologic resources (fossils, fossil localities, fossiliferous and potentially fossiliferous rocks) where these resources might be adversely impacted by projects on public lands.

This report summarizes the results of a paleontologic resource assessment that was conducted for the Mead/McCullough-Victorville/Adelanto Transmission Project Final Environmental Report (Final ER).

Paleontologic resources were inventoried, and mitigation is proposed, in conformance with all applicable laws and regulations affording protection to such resources. The study area (refer to Figure 3-8F in Chapter 2 of the Final ER) consists of a number of alternative corridors extending from the Adelanto/Victorville area of southern California to a point south of Boulder City in southern Nevada, a distance of about 190 miles. Each corridor link, six miles in width, is centered on a reference centerline and would contain a ROW, generally 200 feet wide.

To protect the resource from unauthorized collecting by amateur/commercial collectors, detailed information regarding fossil localities and fossil-bearing strata is not included in this report, but instead is contained in the supporting technical report (Lander and Alderson 1985), which will be made available to qualified investigators by the U.S. BLM, Riverside District.

This report was prepared by Dr. E. Bruce Lander and Mr. John M. Alderson, paleontologic consultants with Engineering Science, Inc., Pasadena, California. Dr. Lander has a Ph.D. degree in paleontology. Mr. Alderson has a B.S. degree in geology. Both individuals have previously conducted paleontologic resource investigations in southern California, including the Mojave Desert.

SECTION 2.0

DATA SEARCH

The following methods were employed to establish the inventory of known and potential paleontologic resources within the study area:

- (1) Archival searches were conducted at local museums and institutions in southern California that contain fossil collections from the project area. This search provided taxonomic, geologic, and geographic information on known fossil occurrences in the project area. The institutions accessed include the University of California, Riverside; Natural History Museum of Los Angeles County, Los Angeles; and the San Bernardino County Museum, Redlands.
- (2) Paleontologic literature on the area was reviewed for additional information and is cited in subsection 3.2.
- (3) Geologic maps of the project area were studied to determine the geographic distribution of fossil-bearing and potentially fossiliferous formations within the corridors.
- (4) Paleontologists at the institutions cited above and having detailed knowledge of the area were consulted.

Fossil-bearing strata, potentially fossiliferous formations, and known fossil localities were inventoried and mapped for the entire width of the alternative corridors. The results of the data search are summarized in subsection 3.2.

SECTION 3.0 PALEONTOLOGIC RESOURCE ASSESSMENT

3.1 METHODS

Paleontologic resources within a corridor link include known fossil occurrences (specimens) and localities, the fossil-bearing strata that produced these remains and contain these localities, and strata with the potential for containing particular types of fossils within a link because they have produced similar occurrences outside of the link. Strata with a high potential for producing fossils are likely to yield comparatively common remains. Strata with a moderate potential are likely to produce fewer fossils. Strata with a low potential are likely to contain very few, if any, fossils. The geographic distribution of exposures of particular fossil-bearing and potentially fossiliferous rocks within a link is determined from published geologic maps of the project area. Geologic map coverage is available for the entire study area at a scale of 1:250,000 (Jennings 1961; Jennings and others 1962; Longwell and others 1965; Rogers 1967).

The level of importance of the paleontologic resource in a particular area of exposure is based on an evaluation by paleontologists working in the project area of the known or potential type and frequency of fossil occurrences in fossiliferous or potentially fossil-bearing rocks.

Vertebrate remains are comparatively rare in the fossil record; therefore, localities or strata containing these remains are considered more important than those containing similar numbers of invertebrate remains, which are relatively common. Localities or strata containing relatively few remains are considered less important than those containing numerous similar fossils (particularly if the latter represent a diverse assemblage), unless the remains represent comparatively rare taxa. Localities or strata containing associated vertebrate fossils and invertebrate or plant remains are considered highly important because of the potential for detailed correlation of their respective time scales (e.g., the North American land mammal ages with the Pacific Coast marine molluscan stages). Fossil-bearing and potentially fossiliferous rocks of the same formation are assigned the same level of importance, based on similar types and frequencies of known and potential fossil occurrences, the evaluations by paleontologists working in the area, and the low confidence in available survey data, if any, for a more complete evaluation.

The criteria mentioned above are considered the most amenable for the evaluation and ranking by importance of particular intervals along a link or corridor and a comparison of alternative routes because they are based on known and potential fossil occurrences in particular fossil-bearing and potentially fossiliferous rock units with previously delineated areas of exposure. The criteria used in defining the level of importance of a particular formation exposed along a route is based on the type and number of fossils and the number of fossil localities that exposures of the unit have produced in or near the study area and their potential, based on these occurrences, for yielding

comparable numbers of localities and similar remains in the ROW. These levels of importance are defined below.

(1) High

- (a) Formation containing comparatively common vertebrate fossil localities and/or specimens (high potential), particularly if the specimens represent a relatively diverse vertebrate assemblage.
- (b) Formation containing associated vertebrate and invertebrate or plant fossil localities and/or specimens (variable potential).
- (c) Formation containing vertebrate specimens representing comparatively rare species (variable potential).
- (d) Formation containing comparatively abundant invertebrate fossil localities and/or assemblages (high potential).
- (e) Vertebrate, invertebrate, or plant fossil locality and strata of the fossil-bearing formation in the immediate vicinity of the locality (high potential).

(2) Moderate

- (a) Formation containing comparatively few, isolated vertebrate fossil localities (moderate potential), each yielding only a few or single species or specimen(s).
- (b) Terrestrial deposits that may contain vertebrate fossils (variable potential).
- (c) Formation containing comparatively few invertebrate fossils (moderate potential).

(3) Low

- (a) Very coarse sediments containing very few or no invertebrate and no vertebrate fossils (low potential).
- (b) Slightly metamorphosed deposits containing very few or no invertebrate and no vertebrate fossils (low potential).

(4) None

Granite, lavas, and other igneous rocks and highly metamorphosed rocks that do not contain fossils (no potential).

3.2 PALEONTOLOGIC RESOURCES OF THE CORRIDOR LINKS

Nearly 165 fossil localities were documented within the alternative corridor links during this assessment, many along or very near the centerlines. Although seemingly unfossiliferous rock units exposed along the routes often contain numerous fossil localities outside the routes, such a distribution of localities is to be expected because the routes contain a comparatively small percentage of the total outcrop area of any fossil-bearing unit. However, it may also reflect the uneven distribution of fossils and previous survey efforts. Fossils may not be reported from a particular area of exposure for other reasons: fossils collected previously are housed in distinct museums that could not be accessed for this data search, they have not been described in articles reviewed for this study, the locality data are too poor, and/or the fossil localities are not plotted on topographic maps, as is the case with many vertebrate localities in the Mojave Desert. Nevertheless, and until proven to be otherwise by field surveying, these seemingly unfossiliferous exposures are considered to have the same potential for producing fossil remains as fossiliferous exposures of the same unit. Fossils may be common within a particular unit but are not recorded from a particular area because the fossil-bearing strata are not exposed at the surface. They may be covered by unfossiliferous strata in the same formation or by alluvium. Fossils are frequently uncovered in such rocks during construction projects that expose fresh bedrock.

The contents and importance of known and potential paleontologic resources within the study area are discussed below by formation, beginning with the oldest unit. Much of the information presented below and summarized in Table 3.2-1 by formation, resource, importance and occurrence along the centerlines is based on the archival search at the San Bernardino County Museum (SBCM), the results of which are contained in a report by Reynolds (1985b).

In order to maintain the confidentiality of geographic information regarding fossil occurrences contained in formational names, locality data, and paleontologic resource locality assessment maps, these potential sources of information are not presented in this section, but are contained in subsection 3.2, Tables 3.2-1 and -2, and Plate I of the supporting technical report (Lander and Alderson 1985). Formational names in subsection 3.2 and Table 3.2-1 of the technical report are keyed to discussions of fossil-bearing units in subsection 3.2 of this report by their respective subsection numbers (3.2.1, etc.) Plate I of the technical report depicts fossil localities and the importance of formations exposed along the alternative routes.

The centerlines are usually located in areas of comparatively low elevation/relief underlain by Cenozoic continental strata, but are usually routed around areas of comparatively high elevation/relief composed of Paleozoic and Mesozoic marine strata. As a result of this routing, little exposure of Paleozoic and Mesozoic marine rock occurs along the centerlines, while extensive exposure of fossiliferous and potentially fossiliferous Cenozoic

continental strata, particularly strata of Pleistocene and Holocene age, occurs in the ROWs.

At least six marine invertebrate-bearing formations of Cambrian to Triassic age, three of which occur along centerlines, were identified in the study area during this assessment. Four land mammal-bearing formations of Miocene to Pleistocene age were recognized along the centerlines and an unnamed Pleistocene land mammal-bearing fissure fill was documented near one of the centerlines. Several unnamed land mammal-bearing units of Miocene to Pleistocene age along the centerlines may be referable to the units of similar age cited above.

3.2.1 Cambrian to Devonian Marine Dolomite (High Importance)

This unit has produced marine invertebrate assemblages of Cambrian to Devonian age (Longwell and others 1965).

3.2.2 Mississippian Marine Limestone (High Importance)

One member of this formation has produced abundant diverse Mississippian marine invertebrate assemblages. Fossiliferous exposures of the member occur in the study area at USGS 5737 (Hewett 1956). An SBCM locality occurs in this formation very near one of the centerlines.

3.2.3 Pennsylvanian Marine Series (Moderate Importance)

Bowen (1954) reported limited, poorly preserved Pennsylvanian marine invertebrate assemblages from exposures of this unit in the study area.

3.2.4 Pennsylvanian to Permian Marine Formation (High Importance)

This formation has produced comparatively common diverse Pennsylvanian (Hewett 1956; USGS 5738) and Permian (Grose 1959) marine invertebrate assemblages very near the centerlines.

3.2.5 Permian Marine Formation (Moderate Importance)

This formation is of Permian age and contains reworked Paleozoic marine invertebrate assemblages in the study area (Bowen 1954).

3.2.6 Unnamed Triassic Marine Formation (Low Importance)

Grose (1959) reported a limited, poorly preserved Triassic marine invertebrate assemblage from near one of the centerlines.

TABLE 3.2-1
PALEONTOLOGIC RESOURCES OF THE STUDY AREA
 (See Lander And Alderson 1985 For Formational Names)

<u>Formation Code</u>	<u>Age</u>	<u>Fossils</u>	<u>Localities</u>	<u>Importance</u>	<u>Exposed Along Centerline</u>
2.1	Cambrian to Devonian	Invertebrates	0	High	Yes
2.2	Mississippian	Invertebrates	2	High	Yes
2.3	Pennsylvanian	Invertebrates	2	Moderate	No
2.4	Pennsylvanian, Permian	Invertebrates	4	High	Yes
2.5	Permian	Invertebrates	1	Moderate	No
2.6	Triassic	Invertebrates	1	Low	No
2.7	Miocene	Mammals	0	High	Yes
2.8	Miocene	Mammals	45	High	Yes
2.9	Miocene to Pleistocene	Mammals	76	High	Yes
2.10	Pleistocene	Mammals	13	High	Yes
2.11	Pleistocene	Mammals	19	High	Yes
2.12	Pleistocene	Mammals	1	High	No

Source: Lander and Alderson (1985).

3.2.7 Lower Miocene Continental Beds (High Importance)

Whistler (1984) has reported a diverse early Miocene land mammal assemblage from this unit beyond the study area. These beds are considered to have a high potential for producing similar remains in the study area.

3.2.8 Middle Miocene Continental Formation (High Importance)

This formation has produced the most abundant, diverse middle Miocene land mammal assemblages in the western United States. These assemblages were used to define one of the North American land mammal ages of Wood and others (1941), have produced the type specimens for numerous species, some of which are rare and/or endemic, record changes in the body size probably related to climatic changes, contain age-diagnostic taxa, and occur in stratigraphic intervals containing radiometrically dated volcanic units (see Lander 1985; Reynolds and Lander 1985). Numerous localities occur in the corridor links, many very near and some along the centerlines.

3.2.9 Unnamed Miocene, Pliocene and/or Pleistocene Continental Strata (High and Moderate Importance)

Strata of alluvial, fluvial and lacustrine origin have produced numerous land mammal assemblages very near and along the centerlines. These remains are useful in dating the highly important sediments in which they occur and correlating them with stratigraphic sequences elsewhere in the study area. A number of Pleistocene assemblages and associated radiocarbon dates are discussed by Reynolds (1985a) and Reynolds and Reynolds (1985). Some or all of these units may be referable to previously named formations of similar age elsewhere in the study area.

Large unfossiliferous areas of Quaternary alluvium may be of Holocene age and are considered to be potentially fossiliferous, but, unlike the units discussed above, only of moderate importance.

3.2.10 Pleistocene Continental Gravel (High Importance)

This unit has produced Pleistocene land mammal remains in the study area (Bowen 1954).

3.2.11 Pleistocene Continental Formation (High Importance)

This formation contains large diverse Pleistocene land mammal and bird assemblages that have yielded radiocarbon and uranium/thorium dates (Jeffer-son 1985).

3.2.12 Unnamed Fissure Fill (High Importance)

A fissure near one of the centerlines has produced Pleistocene land mammal remains.

3.2.8 Middle Wisconsin Continental (High Importance)

This formation has produced the most abundant diverse middle Wisconsin land mammal assemblages in the western United States. These assemblages were used to define one of the North American land mammal ages of Wood and others (1941), have provided the type sequence for numerous species zones of which one was earlier defined, were elements in the body size probability related to climatic changes, contain age-determinative data, and occur in stratigraphic intervals containing radiocarbonally dated volcanic units (see Lundberg, 1965; Hayashi and Lundberg, 1967). Fossils located near the centerline, many very near and some along the centerline.

3.2.9 Unnamed Wisconsin Fissure and/or Pleistocene Continental (High and Moderate Importance)

Strata of alluvial, fluvial and lacustrine origin have produced numerous land mammal assemblages very near and along the centerline. These remains are used in defining the highly important sequence in which these units are correlated with stratigraphic sequences elsewhere in the study area. A number of Pleistocene assemblages and associated radiocarbon dates are discussed by Hayashi (1966) and Hayashi and Lundberg (1967). Some or all of these units may be referable to previously named formations of similar age elsewhere in the study area.

Large unfossiliferous areas of lacustrine siltstones may be of Pleistocene age and are considered to be potentially fossiliferous, but, unlike the units discussed above, only of moderate importance.

3.2.10 Pleistocene Continental (Low to High Importance)

This unit has produced Pleistocene land mammal remains in the study area (Bowen, 1954).

3.2.11 Pleistocene Continental (Low to High Importance)

This formation contains large diverse Pleistocene land mammal and bird assemblages that have yielded radiocarbon and thermoluminescence dates (Lundberg, 1967).

SECTION 4

IMPACT ASSESSMENT

Paleontologic resources in the project area would be subject to both the direct and indirect impacts that would accompany construction of the project. These adverse impacts would be in addition to those that might have resulted from earlier construction in parallel ROWs. The most significant effects to these resources would be from direct impacts, those that directly affect fossils, fossil localities, and fossil-bearing and potentially fossiliferous rocks. Such impacts would arise primarily from tower pads, ancillary facilities, and access roads, and excavation for terminal facility and tower foundations. For the most part, these impacts would be limited to the ROWs, although areas outside the ROWs might also be impacted by construction of access roads and by excavation of rock for fill. Direct disturbances to bedrock usually end with construction. Covering of rocks by burial for road and facility construction would be permanent, however, and would prevent future study of the rocks.

Indirect impacts are those that do not greatly disturb fossil-bearing or potentially fossiliferous rocks but last long after construction has ended. Exposure of rock during construction or spraying of herbicides to retard plant growth may subject these rocks to increased erosion and the loss of fossils. Unauthorized collecting of fossils by project personnel or amateur/commercial collectors results in increased attrition. Offroad vehicles (ORVs) often drive over localities and destroy fossils. Fossils are also subject to vandalism. The latter impacts are an important consideration because the project would be near urban centers and easy access would be afforded by construction of new access roads. These impacts could all occur during operation of the project, although unauthorized collecting by project personnel could also occur during or prior to construction.

The relative importance of impacts to a particular area of exposure is proportional to the importance (high, medium, low) and amount of the formation of rock unit to be disturbed, as well as the percentage of the total undisturbed exposure of the unit that will be disturbed. However, this report places major emphasis on the importance of the unit. Without a regional study, it would be difficult to determine even a rough percentage of the undisturbed exposure of a unit that would be impacted. Although additional consideration could be given to important units of very limited geographic extent that would suffer unusually high degrees of impact, even in the most severe cases, such impacts would probably involve much less than 1% of the total undisturbed exposure of a unit. In this report, the importance of impacts to a particular formation is considered to be the same level as the known or potential resources that the unit contains in the study area. For example, impacts to a highly important unit would also be considered highly important (see Table 3.2-1 for importance of formations exposed in links and along centerlines). Areas along the centerlines of potential direct impacts of low, moderate and high importance are depicted in Plate I (importance of impact = importance of resource) of the accompanying technical report (Lander and Alderson 1985).

4.1 CONSTRUCTION IMPACTS

4.1.1 Direct Impacts

Because of the routing of the alternative corridor links, very little exposure of Paleozoic and Mesozoic marine rock occurs along the centerlines. Only limited exposures of formations 3.2.1, -.2, and -.4 occur along the centerlines, where they could be affected by significant direct adverse impacts from ground-disturbing activities during construction.

No known fossil locality would be impacted by the proposed project. However, nearly all of the Cenozoic continental formations (3.2.7, -.8, -.9, -10, -.11) are exposed to some extent along the centerlines, and many known and undiscovered vertebrate fossil localities could be significantly affected by direct impacts to fossiliferous and potentially fossiliferous exposures of these formations by construction and grading for new access roads. Direct impacts to large, potentially fossiliferous areas of Quaternary (or possibly Holocene) alluvium (included in formation 3.2.9), from which no fossil remains are reported, would be of moderate importance.

4.1.2 Indirect Impacts

Indirect adverse impacts during construction would result primarily from unauthorized fossil collecting by project personnel in the ROWs, easily accessible areas near the ROWs, and along new access roads. The formations that would be affected by direct impacts could also be affected by significant indirect impacts, as could numerous known and undiscovered fossil localities. Seemingly unfossiliferous Quaternary (or Holocene) alluvial deposits (included in formation 3.2.9) could be subjected to moderate impacts. Paleozoic (3.2.3, -.5) and Triassic (3.2.6) marine formations, which do not occur along the centerlines, may be subjected to moderate to low indirect impacts. The unnamed Pleistocene fissure fill (formation 3.2.12) lies far enough from a centerline and is so limited in extent that it would probably not suffer any indirect impacts.

4.2 OPERATION

4.2.1 Direct Impacts

No direct impacts would be anticipated during project operation because no ground-disturbing activities would occur.

4.2.2 Indirect Impacts

Significant indirect adverse impacts during operation could occur in the same areas and exposures of formations as direct construction impacts, but would result primarily from unauthorized fossil collecting by amateur/commercial

collectors, who would be afforded easier access to fossiliferous exposures resulting from construction of new access roads.

5.3.1 Highway

A highway plan will be formulated and will be implemented in the near future. The plan will be based on the results of the geological and geophysical surveys and will be designed to provide access to the fossiliferous exposures and to the localities where the fossils were found. The plan will also provide for the construction of a road to the localities where the fossils were found. The plan will be based on the results of the geological and geophysical surveys and will be designed to provide access to the fossiliferous exposures and to the localities where the fossils were found. The plan will also provide for the construction of a road to the localities where the fossils were found.

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SECTION 5 MITIGATION MEASURES

The proposed mitigation program includes measures for reducing impacts to paleontologic resources on Federal, state, local agency, and private land. The levels of mitigation effort for various parts of the route will be determined by the importance of the resource and type of impact. Direct impacts will likely be limited almost entirely to construction. They will occur at tower sites, and along access roads and the transmission line ROW, and would require a higher mitigation effort in more important resource areas. Indirect impacts would occur in the construction zone as well as in the rest of a link and could occur during construction or operation. Areas generally classified as moderate to low or no importance may be found to have comparatively important resources locally that would require increasing the mitigation effort. The scope or magnitude of the total mitigation effort would be determined by the total of moderately and highly important areas, by the amount of direct and indirect impacts to these areas, and by agency jurisdiction and requirements.

A final mitigation plan will be formulated prior to any construction activity and would be based on the results of the data search and preconstruction field survey. The plan will be responsive to Federal, state, and local agency mitigation requirements for lands under their respective jurisdictions.

The mitigation program will incorporate preconstruction survey results in the development of the final mitigation plan to include specific onsite mitigation, as described in the following sections.

5.1 PRECONSTRUCTION SURVEY

Preconstruction field surveys will be conducted of specific construction sites (e.g., tower sites, access roads), located in high importance resource areas to locate fossils that would be lost through construction activities and unauthorized collecting. The need to conduct pre-construction surveys in selected moderate sensitivity areas will be further determined after ROW and road locations are established, based on discussions between the BLM, qualified paleontologists, and the Project Sponsors. When highly important fossils are found, areas immediately adjacent to the site will also be surveyed to determine if highly important sites may be impacted by realignment of the ROW (to avoid the original site) or by unauthorized collecting. Collection will occur at all vertebrate fossil sites to remove specimens. In construction areas containing Cenozoic continental deposits, matrix samples from suitable stratigraphic intervals will be collected. Representative samples of scientifically important invertebrate and plant fossils will also be collected. Field records of all fossils will be prepared as will documentation of the sites on topographic maps and photographs. Based on collected field data, specific construction mitigation procedures will be proposed.

5.2 FINAL MITIGATION PLAN

Field records, maps and photographs will be reviewed and a final mitigation plan specific to high and moderate resource locations will be developed. The final mitigation plan will be reviewed and approved by the BLM and local agencies for their respective jurisdictions. Following approval, the plan will be implemented as part of the Project's construction program.

5.3 POTENTIAL MITIGATION MEASURES

Specific mitigation measures will be determined based on the site specific importance and sensitivity of each resource. The following discussion describes the range of mitigation measures that could be considered and utilized as site conditions require. They are organized in terms of the general class of resource importance corresponding to the resource inventory.

5.3.1 High Importance

If possible, avoid direct impacts to highly important sites during construction of tower pads, ancillary facilities, and access roads. A paleontologic monitor will be stationed at selected construction sites during construction. If fossil remains are uncovered during construction, construction activities adversely affecting the resource would be stopped until a qualified paleontologist has determined the importance of the resource, made recommendations regarding further mitigation, and initiated/completed these measures. Recommendations will include one or more of the following: site avoidance, no mitigation, excavation, or additional field survey of the immediate area, including the area beyond the ROW.

5.3.2 Moderate Importance

Conduct preconstruction field survey similar to that described for highly important areas in moderately important fossiliferous areas that might contain additional remains that would otherwise be lost to construction activities and unauthorized collecting. Monitor construction only where important fossil remains are found during the survey or construction. When such remains are found, evaluate them and, if considered highly important, conduct a comprehensive survey of the fossiliferous strata and monitor construction in the immediate area of the site.

5.3.3 Low/No Importance

Do not survey or monitor areas of low or no importance unless fossil remains are found during construction. If important fossils are uncovered, conduct mitigation measures similar to those for moderately important areas in the

immediate area of the site. The particular level of effort will depend on the importance of the remains.

5.4 POSTCONSTRUCTION EFFORT

After completion of the fieldwork, fossils and potentially fossiliferous matrix collected from particular areas and all supporting documentation will be deposited in designated repositories (San Bernardino County Museum for California) which will process the matrix and prepare, identify and curate the fossils. Results of the survey and monitoring, including lists of taxa collected from particular units, will be documented in a final report.

5.5 MITIGATION SUMMARY

With the exception of avoidance of an entire area of concern, the comprehensive collecting of fossils during preconstruction surveys and construction monitoring (as recommended in the mitigation program) would be the most effective way of reducing adverse direct impacts to fossils, fossil localities, and fossiliferous and potentially fossil-bearing formations that would occur during construction within a ROW, along new access roads, and at other construction sites, as well as the adverse indirect impacts which could occur during construction and operation in all of these areas and in adjacent parts of a corridor. The proposed mitigation program would also ensure adequate data recovery/preservation while greatly reducing costly construction delays. Areas/exposures along the centerlines where low/no, moderate, and high levels of mitigation effort would be required are depicted in Plate I (level of mitigation effort = importance of resource) of the supporting technical report (Lander and Alderson 1985). (See Table 3.2-1 for importance of formations.)

5.5.1 High Level Mitigation Effort

Exposures of the following highly important formations occur along the centerlines and would require a high level of mitigation effort: 3.2.1, -.2, -.4, -.7, -.8, -.9, -.10, and -.11.

5.5.2 Moderate Level Mitigation Effort

Potentially fossiliferous exposures of Quaternary (or Holocene) alluvium would require a moderate level of mitigation effort.

5.5.3 Low Level/No Mitigation Effort

No formation of low importance is exposed along the centerlines. Intrusive, extrusive and metamorphic rocks of no importance occur and would require no mitigation effort.

SECTION 6 REFERENCES

To protect the confidential nature of information presented in this report, references sited here are provided in the accompanying technical report (Lander and Alderson 1985), cited as:

Lander, E.B., and Alderson, J.M., 1985, Paleontologic Resource Investigation for the Proposed Mead/McCullough-Victorville/Adelanto Transmission Project, San Bernardino County, California, and Clark County, Nevada; Engineering Science, Inc.; prepared for U.S. Bureau of Land Management and Los Angeles Department of Water and Power.

APPENDIX B
GEORGE AIR FORCE BASE
HEARING TESTIMONY

APPENDIX B
GEORGE AIR FORCE BASE HEARING TESTIMONY

The following documents were submitted to George Air Force Base at the East/McCallough/McDonnell/McDonnell/Tennessee Hearing before hearing held in Victorville, California on August 8, 1985. These documents were subsequently submitted through discussion with the District Attorney, as documented in Table 1-2 in Chapter 1 of this report. Comments are provided here for informational purposes.

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GEORGE AIR FORCE BASE HEARING TESTIMONY

The following comments were submitted by George Air Force Base at the Mead/McCullough-Victorville/Adelanto Transmission Project public hearing held in Victorville, California on August 8, 1985. These concerns were subsequently satisfied through discussions with the Project Sponsors, as documented in Table I-2 in Chapter I of this report. Comments are provided here for informational purposes.

Good evening ladies and gentlemen. My name is Colonel Donald White and I am the Base Commander at George Air Force Base. I am here this evening to express the Air Force's concern on the routing of the power lines in the Mead-McCullough-Victorville/Adelanto Transmission Project.

As you know, George Air Force Base trains fighter pilots for F-4 Phantom units around the world. We soon will be the Air Force's only F-4 training base. We train both American and German pilots. In addition, we have a defense suppression mission with our F-4G, Wild Weasel aircraft. Wild Weasels allow other fighters to do their job in a high-threat environment by suppressing surface-to-air missiles and radar-controlled anti-aircraft guns. George is one of three Wild Weasel bases in the world, and the only one in the United States. As you can see, we are an important--even vital link in the defense of the United States and our allies around the globe.

We at George are proud of our mission and are glad we can train in the supportive environment in the high desert that is provided for us by residents of the High Desert area. In return, we have an economic impact on the surrounding communities of about one hundred and ninety-six million dollars a year through payrolls, contracts, and jobs.

I would like to comment on the Draft Environmental Impact Statement by first talking about how our aircrews fly in the Coyote Lake area and why that's important to George Air Force Base. Secondly, I'll

provide you with a summary of our input to Los Angeles Department of Water and Power on this issue; and, finally, I'd like to point out discrepancies in the Draft Environmental Impact Statement. Additionally, I would like to submit two written items for the record; first, a more detailed narrative of our past meetings with Los Angeles Department of Water and Power on the proposed transmission line routing; and second, a detailed critique on the Draft Environmental Impact Statement.

IMPORTANCE OF VR 1217

The Coyote Lake area remains an item of serious concern since it would be affected by the proposed Los Angeles Department of Water and Power transmission line. We are concerned because of a low level route, VR1217, which has been approved for use in this area.

VR 1217 is, and will remain for the foreseeable future, the primary step-down training area for the 37 Tactical Fighter Wing Wild Weasels. They must continue to have a viable area to conduct their low altitude training down to 100 feet above ground level. For the purposes of low altitude training, above ground level means above man-made obstructions, not merely above the ground surface.

IMPACT ON GEORGE AIR FORCE BASE TRAINING

The Coyote Lake area represents the only feasible area to support this continuing low altitude training requirement because of its close proximity to George Air Force Base's only gunnery range. VR 1217 (west of I-15) is already hampered by a powerline path which parallels I-15. Aircrews flying VR 1217 must remain well above the 100 foot level not only while crossing I-15, but until clear of the existing powerlines (Link 21A). At present, there is only a distance of approximately seven (7) miles from the Link 21A to the Barstow - Ft Irwin road. Because the aircraft must be 100 feet above the powerlines, it is roughly 1 mile beyond the powerlines (21A) before the aircraft is effectively stabilized at 100 feet above ground

level. This gives a maximum of six (6) miles to conduct their training. The speeds flown over this area are in the 475-525 miles per hour range, which yields a very short period of effective training.

The tactical formations flown through this area place a wingman on either side of the flight leader. The leader is generally pointed at the southernmost tip of the lakebed with wingmen on either side. In order to effectively preserve the Coyote Lake area for our required training, a corridor extending from 12,000 feet south of the VR 1217 centerline to the northern edge of Coyote Lake must be maintained free of obstructions. We do recognize, however, that these lateral clearances are affected by existing terrain variations.

AIRCREW ACTIONS WHILE

FLYING AT 100 FEET ABOVE GROUND LEVEL

To be certified down to 100 feet above ground level, each aircrew must demonstrate the ability to maintain safe, stabilized flight under simulated combat conditions.

The pilot in the front cockpit is looking only straight ahead. The physical and mental demands of flying at 475-525 miles per hour at 100 feet above ground level require his full attention to avoid the terrain. The Electronic Warfare Officer who sits in the back seat is responsible for monitoring and advising of aircraft speed and altitude changes, visually scanning for possible conflicting aircraft and to simulate looking for possible enemy aircraft and or missiles.

Because of the rear cockpit construction, the Electronic Warfare Officer cannot see forward.

At the speeds being flown, aircraft instrumentation is not entirely reliable. Low altitude and turbulence contributes to sometimes erratic indications on the altimeter. It is the Electronic Warfare Officer's responsibility to keep the pilot advised of the need to climb or descend in order to stay at 100 feet above ground level. The Electronic Warfare Officer in the wing position must also advise the pilot if there is a need to move fore or aft in order to maintain the required formation position. With the existing obstructions, our aircrews only have a very short distance of relatively level terrain at 100 feet above ground level.

The proposed presence of a new set of powerlines in the Coyote Lake area will cause a further degradation in our limited training time, even if the lines are basically parallel to our flight path. The wingman on the southside of the formation has to have sufficient lateral spacing at 100 feet above ground level to be tactically separated from the flight lead, and still have safe lateral separation from the powerlines. We believe that our 100-foot training would be severely impacted by the establishment of a new powerline corridor.

An additional safety factor to be strongly considered is the potential for conflict between Army helicopters, which cross Coyote Lake flying from Ft. Irwin to the Barstow-Daggett airport, and George Air Force Base tactical jet fighters. A powerline will cause the helicopters

to climb to an elevation that may place them at the same altitude that George's aircrews are training in.

IMPACT OF A CORRIDOR

A powerline corridor in the Coyote Lake area will further infringe on our training area. More than one line requires more lateral land space and would undoubtedly extend even further into our training area.

SUMMARY

Because of these factors, it is our position that the Bureau of Land Management should strongly consider selecting a proposed route which will avoid the Coyote Lake area entirely. George Air Force Base is adamant in stating the proposed link 20a is totally unacceptable. Link 44 is an improvement over Link 20a, however, it would present certain problems because its proposed location would still be within the flight corridor of VR1217. There may be certain actions which could be taken which would make a modified Link 44 acceptable to George Air Force Base. These actions would have to be adopted completely before we could be assured the proposed Link would not degrade our training activities. These adjustments are: first, the initial break point of the present proposed Link 44, that is the point where the Link breaks from the existing corridor, must be shifted approximately 3 miles to the south so as to clearly avoid VR1217; second, the towers in this area must be a of a height of no

greater than 95 feet; and third, we must be assured that this would be the northernmost line of a series of lines should a corridor ever be approved in this area. The point is that we cannot accept any further encroachment of transmission lines into the Coyote Lake area without seriously jeopardizing the lives of our aircrews or causing George Air Force Base to lose this valuable route entirely.

If there are no questions on what I've just covered, I would like to provide our perception of the process we were involved in as we met and worked with the Los Angeles Department of Water and Power staff. Also, as I mentioned earlier, a summation of our meetings with Los Angeles Department of Water and Power is being submitted for the record.

First, it was our understanding that Los Angeles Department of Water and Power was attempting to find an alignment for a single transmission line, not a corridor. This misconception continued until Los Angeles Department of Water and Power indicated otherwise in an April 22, 1985 letter.

Second, we perceived our participation in the process was similar to that being undertaken by all affected agencies and or interested parties. That is, all parties were being asked to list their preferences, and indicate what mitigation measures would be required should it become necessary to construct a line within their environs. It now appears that was not the case; rather, that George Air Force Base was the only agency that participated in this manner.

Third, George Air Force Base hoped to convey to Los Angeles Department of Water and Power, and have included in the Environmental Impact Statement, a description of our activities in the Coyote Lake area, including an understanding and appreciation of the threat a transmission line would be to the safety of our aircrews. We hoped that our statement of preferences would be considered and accepted. Also, it was imperative to us that Link 20a be recognized as an extremely serious threat to our crews and mission. We wanted Los Angeles Department of Water and Power to understand that Link 44 was not acceptable and that to be made acceptable, certain mitigation measures were required regarding route alignment and tower height.

Quite frankly, I don't think our perception of the process was correct. We are disappointed that our safety and mission concerns were not given equal consideration to different issues voiced by others. Nonetheless, we feel satisfied our role was the proper one and are confident the Environmental Impact Statement will be corrected and that our activities in the Coyote Lake area will be properly addressed and the operations preserved.

I would like now to submit a critique of the Draft Environmental Impact Statement. Generally, this critique addresses the fact that the document fails to properly define George Air Force Base's existing use of the Coyote Lake area as a low level training area. Further, the Draft does not adequately assess the impacts of either Link 20a or 44. It is our position that the Environmental Impact Statement can not be certified as being adequate until these deficiencies are corrected. We also feel that Link 20a or 44 cannot be regarded as the environmentally acceptable alternatives. As noted earlier, either mitigating measures must be adopted to make Link 44 workable, or it will have a significant impact on our flight operations and jeopardize the safety of our crews.

In summation, I offer the following:

1. George Air Force Base would strongly recommend an alternate route be selected instead of one in the Coyote Lake area. This will preclude degradation of VR 1217 and, therefore, allow for continued training of aircrews in this area.
2. Our concern is for the safety of the aircrews that utilize the Coyote Lake area for training purposes. We recognize that other issues regarding line visibility and unsightliness are legitimate concerns, but do not consider them as important as the safety of our aircrews.
3. George Air Force Base does not support an alignment which may cause citizen and community dissatisfaction because of the existence of an unsightly transmission line. It is hoped a routing can be selected which will satisfy these citizen and community concerns, while at the same time avoiding the Coyote Lake area.
4. Should it be deemed necessary to route a corridor near the Coyote Lake area, that route would have to be a modified Link 44. Modifications would have to include those items listed earlier. Additionally, George Air Force Base would require we be allowed to participate in the detailing of a modified Route 44 so that we could insure the specific alignment would not jeopardize the lives of our aircrews, or cause a loss of VR1217.

5. The Environmental Impact Statement should be changed to address our concerns as outlined earlier. The document must acknowledge and speak to the adverse effects of routing a transmission line or lines through the Coyote Lake area.

6. The California Desert Conservation Area Plan should be analyzed and changed prior to making a decision on a transmission line which will be routed outside of designated utility corridors.

7. If either Link 20a or the existing proposed 44 is selected, George Air Force Base feels a statement of overriding considerations should be made so the record will show why it was necessary to pursue an option which clearly would cause a significant impact on our operational requirements.

8. George Air Force Base will continue to participate willingly and openly in the planning and environmental process for any and all proposals which may affect our operational capability. George Air Force Base is aware that a myriad of diverse factors must be analyzed as part of this process, and hard decisions must be made. We only ask that our concerns too be addressed and impacts upon our activities be considered and mitigated.

I thank you for your time.

PAST MEETINGS BETWEEN GEORGE AIR FORCE BASE AND THE LOS ANGELES
DEPARTMENT OF WATER AND POWER STAFF

In November of 1984, George Air Force Base met with Los Angeles Department of Water and Power concerning a proposed routing north of the airfield. Our position has been that as long as the route would not penetrate George Air Force Base's take off and landing zones we would not be concerned.

Los Angeles Department of Water and Power requested an additional meeting, which occurred at George Air Force Base on Jan 18 1985. At that meeting, Los Angeles Department of Water and Power presented a map of route alternatives and asked for our input. Additionally, we were asked to provide a statement of preferences regarding route alternatives and specifically to comment on proposed Link 20. We responded in a letter to Los Angeles Department of Water and Power on Feb 22 1985. In that letter we indicated the following preferences:

1. Follow existing powerline routes exclusively (Links 23, 25 and 32/35 or 33/34).
2. Follow alternate existing routes which come through Lucerne Valley or Daggett/Highway 58 westward.
3. Utilize Link 41 without using Link 20. The tie-in link from the intersection of Links 19 and 21 should remain south of the Calico Mountains.

4. Utilize Links 24a and 43.

5. Utilize Link 20 by moving it south (remaining as close to the northern edge of the Calico Mountains as possible). An additional mitigation measure for Link 20 would be to reduce tower height below 100 feet.

In response to the Los Angeles Department of Water and Power request for a statement of impact upon our flying operations by the establishment of Link 20, the following was submitted:

This link as presented by Los Angeles Department of Water and Power at the Jan 18, 1985 meeting was not acceptable to fighter flight operations because of its presence in the Coyote Lake area where it would parallel VR 1217/1218 route centerlines. VR 1217 has a minimum altitude of 100 feet above ground level. Once past I-15, on a westerly heading, aircrews use this area as a prime step-down training area. Towers of any height above 50 feet will impose an unacceptable degradation to required training. Alternative 5. (above) is an undesirable but workable compromise.

On Apr 2 1985, George Air Force Base received correspondence from Los Angeles Department of Water and Power informing us that Link 20a was going to be the preferred route in the Draft Environmental Impact Statement. The letter stated this route would be moved to the south

and towers of less than 100 feet would be constructed in an effort to alleviate our concerns.

We responded on Jun 21, 1985 that the route should be moved further south and that it was imperative to ascertain the tower height, so that the safety of our aircrews would be assured and the integrity of VR 1217 would be preserved. Additionally, we requested another meeting to have Los Angeles Department of Water and Power explain why other routes were not selected.

This meeting occurred on July 9 1985 at George Air Force Base. During the meeting, we were told that many other alternatives were rejected (i.e., Victorville area & Helendale area) because of early opposition by area residents. Los Angeles Department of Water and Power also indicated that they would pursue their proposed route because of these citizen objections. They further stated that placing a route through the Calico Mountains was an unacceptable option because of the existence of a proliferation of mining claims. Additionally, they indicated a concern about using existing utility corridors because of a reliability factor. Lastly, we were told the towers would only be lowered to 95 feet. We indicated to them that this height was unacceptable and we would oppose this proposed routing.

The last meeting was in reality a helicopter tour of the Coyote Lake and proposed Link 44, which occurred on 5 Aug 85. This meeting was proposed by members of my staff and agreed to by Los Angeles Department of Water and Power. We appreciate the Los Angeles Department of

Water and Power to agreeing to this tour and providing the helicopter. The trip provided valuable insight into the proposed route and helped George Air Force Base gain a better understanding of the Link and its effects. As a result of this tour, we now take the position that, while we would recommend a route be selected which avoids the Coyote Lake area, we can, reluctantly, accept a modified Link 44 which meets all of the criteria outlined earlier.

GEORGE AIR FORCE BASE

CRITIQUE OF ENVIRONMENTAL IMPACT STATEMENT

Page S-6. Last paragraph should be modified to say that the impacts of a proposed corridor within existing low level flight areas of George Air Force Base have also been evaluated. Prior to being able to state that however, the document must in fact make that evaluation.

Pages S-7 through S-9. "Environmental Consequences" does not mention the short term impact of a transmission line, the precedent setting action of the line, nor the long term effects of the utility corridor on VR 1217. Simply put, until that is done, the Environmental Impact Statement cannot be considered complete.

Page 3-20. Expansion of the Ground Electrode System in the Coyote Lake area needs to recognize VR 1217. Mitigation similar to that being undertaken for the present Intermountain Power Project line should be sufficient. George Air Force Base requests to be consulted to insure impacts are mitigated.

Page 3-21. In that the converter station expansion will probably occur with the George Air Force Base airfield environs as defined in the Air Installation Compatible Use Zone (AICUZ) study, we request that Los Angeles Department of Water and Power consult us as part of the planning process.

25
Page 3-3⁵. Paragraph 2 states that after Link 20 was relocated south (which then became Link 44), George Air Force Base indicated the alignment would be deemed acceptable. That is not the case. We indicated that was an undesirable, but workable solution if the link could be relocated even further south, and if the height of the towers was such that they would not interfere with our operations. To date, we have not been assured that either has been achieved.

Page 3-27. Last paragraph indicates Option C-4 will avoid potential impacts with George Air Force Base's low level routes. As indicated above, we do not concur with this statement.

Page 3-29. Second paragraph describes the Kramer Junction corridor as Links 21a, 20b, 41, 38, 39, 40a, 40b, 30 and 31. Presently, the only way to complete that link is through either 20a or 44, which are the two links which will significantly impact our operations. Clearly, this needs to be corrected and the impacts to our flying operations identified.

Page 3-30. Second paragraph, indicates Alternative A is least preferred by George Air Force Base, when in fact it is our most preferred alignment. This is a significant point and one which must be corrected.

Page 3-30 and 3-31. This portion of the Environmental Impact Statement indicates Alternative B is acceptable to George Air Force Base. Again, this is simply incorrect. How the route is connected from 21a

to 20b is of great concern to George Air Force Base because it could ultimately cause a loss of VR 1217, a point which the Environmental Impact Statement does not even acknowledge. All of the alternatives, except the Bureau of Land Management's preferred Route A, propose going through the Coyote Lake area and, as such, would affect our flight operations.

It seems appropriate to make a general comment about Chapter 3 which addresses alternatives. There can be no doubt that Los Angeles Department of Water and Power has not understood our position. That may be a matter of simply misinterpreting points raised by my staff during the numerous meetings held on this issue. Whatever--it should now be evident that George Air Force Base is extremely concerned that what is being proposed in this draft Environmental Impact Statement may significantly affect our ability to use VR 1217 as a low level training route, and the document fails to recognize this fact. This matter must be corrected in the final document.

Chapter 5 addresses environmental consequences. Because of a lack of recognition of impacts to VR 1217, Chapter 5 does not mention the environmental consequences of selecting either Link 20a or Link 44. This should be corrected, as well as all tables and listings attached thereto.

Some reliance has been held by Los Angeles Department of Water and Power to the fact that the Coyote Lake area has been designated as a "Contingent Utility Corridor" in the California Desert Conservation

Area Plan. It is the position of George Air Force Base that this designation does not support the Los Angeles Department of Water and Power proposed routing through either link in the Coyote Lake area. The California Desert Conservation Area Plan states that prior to changing a "Contingent" corridor to a "Designated" corridor, an additional Environmental Impact Statement would be required as well as an amendment to the California Desert Conservation Area Plan. Thus, approving a route prior to changing the California Desert Conservation Area Plan is premature and inconsistent with past statements. George Air Force Base will participate in the planning and environmental review process for any utility corridor proposals within the Coyote Lake area, and will withhold further comments until that time.

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